THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. XIX. No. 449—22ND YEAR.] LONDON, JANUARY 4, 1870. [Subscription { 15s. in Advance. / 18s. Credit. } per Annum. DOUBLE NO. Price 1s.

RAMSAY'S NEWCASTLE CANNEL
COAL. Analysis—
10,000 cubic feet of gas per ton of coal.
26-candle gas.
13¼ cwt. coke per ton of coal.
RAMSAY'S PATENT CONDENSED COKE.
DO. GARESFIELD COKE.

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GAS-RETORTS, introduced 1828.
FIRE-BRICK WORKS, established 1804.
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The Fire-Clay is worked from Blaydon Main Colliery, is of excellent quality, and no expense spared in perfecting every article.
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GEORGE GLOVER & CO.,
Patentees of the Standard Gasometers for the Government, and of the
IMPROVED DRY GAS-METERS.
These Meters are warranted to measure correctly and not to vary, and have come into general use more rapidly than any Meters hitherto manufactured.

PARIS EXHIBITION, 1867.
THE TESTING-HOUSE REPORTS.
The Reports prepared for the Science and Art Department, under the direction of the Lords of the Council, detail the arrangements made for testing the gas apparatus exhibited. In the testing-house erected by the Special Committee appointed to further this object a gasholder was constructed by Mr. G. Glover, being a *fac simile* of that produced and patented by him in 1860, and deposited in the Exchequer, under the provisions of the Sales of Gas Act, and British manufacturers of gas apparatus were invited by advertisement, and by direct application, to forward worthy objects for exhibition. Mr. G. Glover was, however, the only manufacturer who sent Meters to be tested. The report states that, as "Mr. Glover is a manufacturer of Dry Meters only, no opportunity presented itself of comparing their accuracy with that of Wet Meters under various circumstances, but the perfection to which that maker has brought his Meters prevents the possibility of those extravagant errors which are well known to exist where Wet Meters are used."
Particulars and lists of prices forwarded on application to Ranelagh Works, Ranelagh Road, Pimlico, LONDON, S.W.; 15, Market Street, MANCHESTER; or 127, Boulevard de Magenta, PARIS.

COWEN'S PATENT FIRE-CLAY RETORTS.
JOSEPH COWEN and CO.,
BLAYDON BURN, NEAR NEWCASTLE-ON-TYNE,
Were the only parties to whom a PRIZE MEDAL was awarded at the GREAT EXHIBITION of 1851, for "GAS-RETORTS and OTHER OBJECTS in FIRE-CLAY," and they have also been awarded in the INTERNATIONAL EXHIBITION of 1862, the PRIZE MEDAL for "GAS-RETORTS, FIRE-BRICKS, &c., for EXCELLENCE of QUALITY."
J. C. and Co. have been for many years the most extensive Manufacturers of Fire-Clay Retorts in the United Kingdom; and orders for Fire-Clay Retorts of all shapes and dimensions, Fire-Bricks, and every other article in Fire-Clay, are promptly executed at their Works as above.
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Coal Office,
QUAY SIDE, NEWCASTLE-ON-TYNE.

FIRST PRIZE IN THE PARIS EXHIBITION.
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THE OLD TUBE-WORKS,
CHURCH HILL, WEDNESBURY;
ALMA WORKS,
WALSALL, STAFFORDSHIRE;
and 69, UPPER THAMES STREET, LONDON,
Original Manufacturers of Wrought-Iron Gas-Tubes, and Holders of the present Patents; Inventors and First Makers of LAP-WELDED FLUES for Steam-Boilers.
J. R. and Co. make all kinds of Tubes and Fittings for Gas, Steam, and Water, and the largest orders may be executed in a few days.
Gun Metal, and all other kinds of Cocks, Stocks, Dies, and Taps, Galvanized Tubes, &c.
N.B.—All goods thoroughly tested before sent out, and warranted.

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WET AND DRY GAS-METER
AND
STREET-LAMP
MANUFACTURERS,
BELL BARN ROAD, BIRMINGHAM.
ESTABLISHED 1830.
All materials found for the alteration of Public Lamps for lighting with the Rod. Regulators with Lava Burners.

BLAYDON BURN AND LOW BENWELL FIRE-CLAY RETORT AND FIRE-BRICK WORKS,
NEAR NEWCASTLE-ON-TYNE.
WILLIAM COCHRAN CARR begs most respectfully to thank the Metropolitan, Provincial, and Continental Gas Companies for their patronage for several years past, and to intimate that he has rebuilt and enlarged his extensive premises for the manufacture of CLAY RETORTS; and that he is now prepared to execute the largest orders with punctuality and despatch. Orders for FIRE-CLAY RETORTS, of all shapes and sizes, FIRE-BRICKS, and all other articles in Fire-Clay, executed on the shortest notice, and on the most reasonable terms.
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These Cannels are extensively used in the Gas-Works of Edinburgh, where the illuminating power of the gas is the highest in Britain.
The yield per ton is 12,573 cubic feet; illuminating power, 33·8 standard candles; coke per ton, 1046 lbs.
Ports of Shipment, in the Firth of Forth.

BO'NESS CANNEL COALS.—This Cannel is largely used in Gas-Works where, in addition to high illuminating power, there exists a demand for superior Coke, it being the best Coke-producing Cannel of all Scottish Cannels. It yields about 11,000 cubic feet of 25 standard candle gas per ton.
Ports of Shipment, either the Forth or the Clyde.
Apply to J. and W. ROMANS, 53, Frederick Street, EDINBURGH; and 1, Walbrook, Mansion House, LONDON.

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LESMAHAGO, N.B.

JAMES FERGUSON & CO.
LESSEES SINCE 1832.
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LA COUR & WATSON,
LEITH.

GEORGE GLOVER AND CO.,
Patentees of the Standard Gasometers for the Government,

TWO MEDALS,

LONDON, 1862.

HAVE OBTAINED THE
HIGHEST
PRIZE
FOR

SILVER MEDAL,

PARIS, 1867.

IMPROVED DRY GAS-METERS AND GASOMETERS,
AT THE
PARIS EXHIBITION.

RANELAGH WORKS, RANELAGH ROAD, PIMLICO, LONDON, S.W.
AND 127, BOULEVARD DE MAGENTA, PARIS.

HENRY HOWARD & CO.,

COOMBS WOOD PATENT TUBE-WORKS,

OLD HILL, near DUDLEY,

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FOR GAS, STEAM, & WATER, EITHER BLACK, GALVANIZED, OR ENAMELLED.

CORE BARS for IRONFOUNDERS, STOCKS, TAPS, & DIES, IRON COCKS, &c.

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MANUFACTURERS of FIRE-BRICKS, LUMPS, & TILES,

AND EVERY DESCRIPTION OF FIRE-CLAY GOODS.

N.B.—A Stock of 15 and 16 in. CIRCULAR RETORTS always on hand. Other kinds made to order on short notice.

SILVER MEDAL, PARIS EXHIBITION, 1867.

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ALBION TUBE-WORKS, BIRMINGHAM,

MANUFACTURERS OF

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For Gas, Steam, Water, &c.

SOLE LICENSEES for the United Kingdom for the LAVENANT PATENT ENAMELLED TUBES & FITTINGS,

the Coating of which does not shell off, is a certain preservative from rust, and resists all effects of expansion and contraction.

LAP-WELDED IRON & HOMOGENEOUS METAL TUBES

For Locomotive, Marine, and Stationary Boilers.

Boiler-Tube Ferrules, Gun-Metal Gland Cocks, Water-Gauges, Whistles, &c.; Stocks, Taps, and Dies for Screwing, and Gas-Fitters Tools of all kinds.

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LONDON: No. 157, Upper Thames Street, E.C. LIVERPOOL: No. 4, Cooper's Row, and 3, Crooked Lane, Strand Street.
MANCHESTER: Barlow's Croft, Chapel Street, Salford. PARIS and LILLE.

BEST AND HOLDEN'S

PATENTS FOR CHARGING AND DRAWING GAS-RETORTS,

WITH CHAMBERS FOR MOUTHS,

REQUIRING NO LUTING.

Gas Engineers are solicited to examine into the merits of this invention before erecting new or altering old retort-houses. It may be seen in action at the Alliance Gas Company's Works, Dublin, where its utility and economy will be clearly demonstrated. Although the saving in labour will be considerable, and quickly return any outlay of capital, there are other and important features strongly recommending its adoption at all gas-works, and which a gas engineer upon examination will at once appreciate.

The Directors of the Alliance Gas Company have kindly consented to give every facility to gentlemen desirous of seeing the invention in operation. Parties, therefore, about to visit Dublin will be so good as to send us their card, and we will furnish them with letters of introduction.

Drawings, &c., may be seen at our Office, and all details explained.

JOHN CHISHOLM, SON, & CO., 44, MARK LANE, E.C.

D. BRUCE PEEBLES,

ENGINEER,

FOUNTAINBRIDGE WORKS, EDINBURGH,

PATENTEE AND MANUFACTURER OF THE

NEW TONGUE & GROOVE JOINTED

WET AND DRY GAS-METERS IN TIN-PLATE CASES,

Being the only Meters yet made of Tin-Plate in which Screws are used for the whole of the jointing instead of Solder.

Gas Engineers who have not yet seen these Meters are solicited to give a trial order, and personally to take one of them to pieces and refit it, as being the short and easy way of assuring themselves of the strength and excellence of the materials, the superiority of the workmanship, and, above all, the simplicity of construction and efficient method of jointing employed.

Strength and lightness combined, with ready access to all the working parts for cleaning or repairs, which may be done by any ordinary workman, render these Meters, wet or dry, well worth the attention of Foreign Gas Companies.

Wet Meters in Cast-Iron Cases, Station-Meters, Governors, Experimenting Meters, &c.

PRICE LISTS ON APPLICATION.

J. & J. BRADDOCK,

GAS ENGINEERS,

GLOBE METER-WORKS, OLDHAM,

MANUFACTURERS OF

IMPROVED CONSUMERS GAS-METERS,

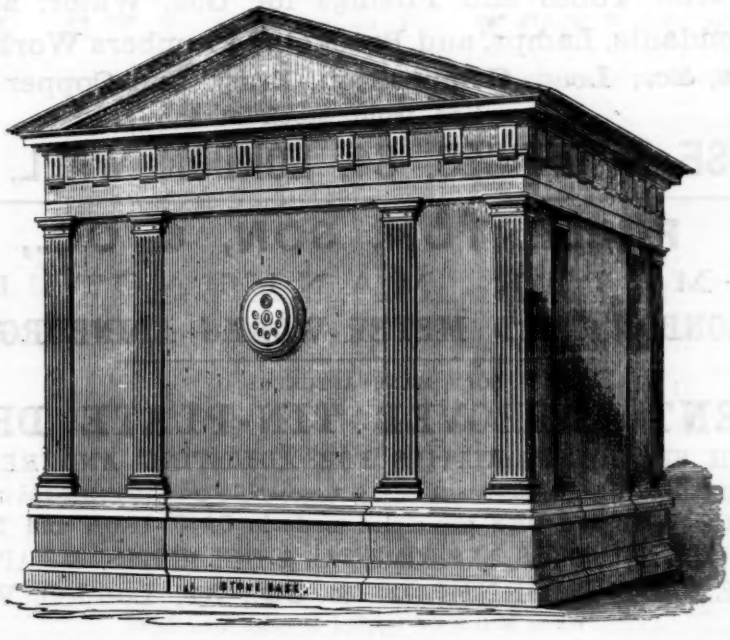
Of the Best Material and Workmanship, carefully adjusted to the requirements of the British Sales of Gas Act and Foreign Standards of Measures.

PATENT COMPENSATING GAS-METERS,

Which are uniform with the Ordinary Meters, and register with minute accuracy.

IMPROVED DRY GAS-METERS,

IN BEST TINNED IRON CASES.



GAS STATION-METERS,

ALL SIZES, WITH PLANED JOINTS.

GOVERNORS, GAUGES, INDICATORS, EXHAUST-GOVERNORS, &c.

Home and Foreign Orders promptly attended to. Terms, &c., on application.

MESSRS. J. & J. BRADDOCK

Tender their grateful acknowledgments for the past generous and extensive patronage conferred on their firm, and beg to assure their Friends, Gas Engineers, and Gas Companies generally, that every exertion will continue to be made to maintain the sterling quality of their work in every department.

Their ORDINARY METERS, WET and DRY, have now a demand over that of any other maker in the North of England; and their STATION-METERS stand unrivalled for Design, Sound Workmanship, and Efficiency.

All sizes of CONSUMERS METERS generally in Stock.

STATION-METERS, in round or square cases, on the Shortest Notice.

THORNELOE AND COMPANY,

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GAS AND WATER ENGINEERS AND CONTRACTORS.

AGENTS FOR

MESSRS. NEWTON, CHAMBERS, & CO.,

THORNCLIFFE IRON-WORKS,

CHAPELTOWN, NEAR SHEFFIELD.

MANUFACTURERS OF

GAS APPARATUS, GASHOLDERS,

SCRUBBERS, CONDENSERS, & PURIFIERS;

IRON MAIN PIPES, VALVES, and FITTINGS for GAS and WATER;

WROUGHT-IRON RETORT-LIDS;

WROUGHT & CAST IRON GIRDERS, BRIDGES, PIERS, &c.

Wrought-Iron Tubes and Fittings for Gas, Water, and Steam; Chandeliers, Pendants, Lamps, and Brackets; Plumbers Work, Water Closets, Pumps, &c.; Lead, Composition, Brass, and Copper Tubes;

Supplied from Stock at the

WAREHOUSE & OFFICES, 34, LONDON WALL, CITY, E.C.

FULLERTON, SON, & CO.,

GAS-METER MANUFACTURERS,

LONDON ROAD METER-WORKS EDINBURGH.

SOLE MANUFACTURERS OF

THE PATENT IMPROVED TIN-PLATE DRY METER,

WITH SPECIAL FACILITIES FOR ADJUSTING AND REPAIR,

The principal parts of the mechanism being accessible by the removal of a single screw.

GAS-METERS on the WET and DRY principles made in CAST-IRON and TIN-PLATE CASES.

STATION-METERS, GOVERNORS, EXPERIMENTAL & TEST METERS, GAS APPARATUS, &c.

LONDON AGENTS: THORNELOE & CO., 34, London Wall, City, E.C.,

Where Meters are supplied to order from Stock.

LAMBERT BROTHERS, WALSALL.

ALPHA TUBE & FITTING WORKS

LIVESEY FIRE-CLAY WORKS,

NEAR BLACKBURN, LANCASHIRE.

ORLANDO BROTHERS,

MANUFACTURER OF PATENT CLAY RETORTS,

AND EVERY DESCRIPTION OF

TUBULAR GLAZED SEWERAGE PIPES, BENDS, JUNCTIONS, ETC.

FIRE-BRICKS, TILES, BLOCKS, AND CHIMNEY-TOPS.

TANGYE BROTHERS & HOLMAN,

ENGINEERS, MACHINERY AGENTS, AND MANUFACTURERS,

10, LAURENCE POUNTNEY LANE, LONDON, E.C.;

And BIRMINGHAM (TANGYE BROTHERS), CORNWALL WORKS, SOHO.

SOLE MAKERS OF

MORTON'S PATENT SELF-SEALING RETORT-LIDS.

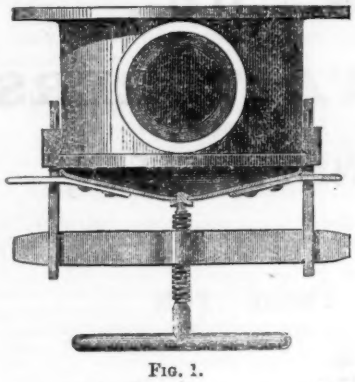

FIG. 1.

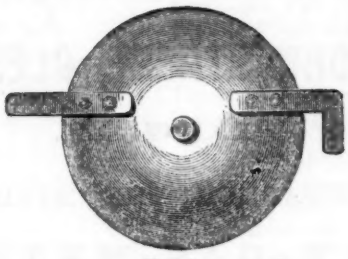

FIG. 2.

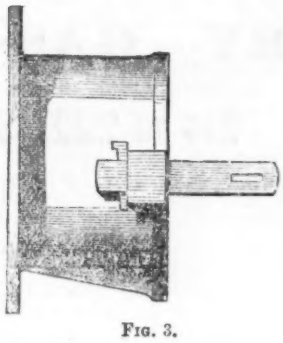

FIG. 3.

Several Hundreds in successful operation in various Gas-Works.

The expensive and cumbersome process of sealing the mouths of Gas-Retorts by means of luting the Lids with lime and other materials hitherto used for that purpose, is henceforth rendered unnecessary, and will be superseded by the very efficient method shown in the accompanying illustrations.

Fig. 1 shows a plan of a mouthpiece with Morton's Patent Lid in section. The mouthpiece is faced true, and the projecting circular edge or periphery of the lid is also turned true, and, by preference, of a semicircular section, so that the point of contact is reduced to a minimum; the convex form of the Lid rigidly sustains the force of the screw, which, by its central action, gives the Lid a uniform bearing, and effectually seals the mouth of the Retort.

Fig. 2 shows a front view of Morton's Patent Lid, which is stamped out of plate iron, having (in this case) ledges to rest on the lugs of the mouthpiece; these Lids, however, are more generally fitted to hinged cross-bars, by which means they remain suspended while the charge is withdrawn and the Retort charged, so that the damage done by throwing them about is entirely prevented.

The advantages obtained are—

1st. The sound sealing of the Retort during the whole time it is carbonizing the charge of coal, there being no jointing medium between the Lid and the mouthpiece.

2nd. The improved condition of the coke by the non-mixture of lime.

3rd. The Lid requires no preparation on the part of the stoker, beyond slightly scraping the surface to remove extraneous grit or dirt.

4th. The Lids are only about two-thirds the weight of the old form in general use, a Lid for a 16-inch mouthpiece weighing a little over 20 lbs.

5th. The Self-sealing Lid reduces labour, saves wear and tear, obviates all the inconvenience and discomfort consequent on the preparation of luting, and effects a great reduction in the working expenses. The cost attending the process of "luting" in several large gas-works, exceeds £1000 per annum, ranging in various works from 20s. to 35s. per mouthpiece.

It will be obvious that a round Lid is the most convenient and the cheapest form. D Retorts are adapted for round Lids, by carrying the bottoms down the necessary depth for that purpose, as shown in Fig 3. Some mouthpieces have been thus adapted, and are in use at the Chartered Gas-Works.

The following testimony speaks in favourable terms after ample and careful test:—

Burslem and Tunstall Gas Company, Longport, Staffordshire, Oct. 12, 1869.

Dear Sir,—In reply to your favour of the 9th inst., I have pleasure in stating that my admiration for your Patent Retort-Lid is most unqualified. I have 14 of them in use, and have tested them in the severest manner possible at these works, but without being able to detect the slightest defect. Yesterday the strap slipped off the exhauster, and a pressure of 13 inches was thus almost instantly thrown upon the Retorts, but although many of the luted Lids were leaking, not the slightest escape was observable from yours. I had anticipated that at least some greater degree of care would have been required in the scraping of the mouthpieces after the drawing of each charge, but even in this particular I find that labour has been reduced.

By every stoker on these works, as well as by myself, your Lids are regarded as a boon.

Please send me 30 more at your earliest convenience.

I am, &c., (Signed) HENRY WOODALL.

R. Morton, Esq.

Chartered Gas Company, Horseferry Road, Westminster, Sept. 15, 1869.

Dear Sir,—I have only lately returned to town, which is the reason I have not replied earlier to your inquiry.

I beg to say that I have had your Lids in use for upwards of two months, and during that time they have always kept a perfectly sound joint. I may add that where your lids are used only one set is required.

I remain, &c., (Signed) G. O. TREWBY.

R. Morton, Esq.

Chartered Gas Company, 146, *Goswell Street, E.C., Oct.* 20, 1869.

Dear Sir,—I have much pleasure in stating that, after some months trial of your Retort-Lids, I find them everything I could desire. I consider the plan a great improvement.

I am, dear sir, yours truly, (Signed) A. UPWARD.

R. Morton, Esq., London Gas Company.

These Lids are in successful use at the London Gas-Works, the Chartered Gas-Works, the Dublin Gas-Works, the Burslem and other Works, giving great satisfaction.

Application for Licences and other Information to be made to

TANGYE BROS. & HOLMAN, 10, Laurence Pountney Lane, London, E.C.

Sole Makers of Upward's Patent Safety Drilling Apparatus, Weston's Patent Differential Pulley Blocks, the "Special Steam-Pump," the Patent Duplex Lever Punch, &c.

THE

UNIVERSAL EXHIBITION OF PARIS,

1867.

SILVER MEDAL.

THOMAS GLOVER & CO.,

DRY GAS-METER MANUFACTURERS,

214 TO 222, ST. JOHN STREET, CLERKENWELL GREEN,

LONDON,

HAVE BEEN AWARDED THE HIGHEST PRIZE FOR

DRY GAS-METERS,

BY THE IMPERIAL COMMISSIONERS FOR THE

UNIVERSAL EXHIBITION, 1867.

WILLIAM PARKINSON & CO.,

(SUCCESSORS TO SAMUEL CROSLEY,)

PATENT WET AND DRY GAS-METER MANUFACTURERS, &c., &c.,

COTTAGE LANE, CITY ROAD, LONDON, E.C.

Established 1816.

PATENT IMPROVED WET METER.

W. P. and Co. invite especial attention to this Meter, which entirely overcomes the difficulty to which ordinary Wet Meters are subjected, owing to the short range of the Float, which is necessary, in order to meet the requirements of the Sales of Gas Act.

"It is well known that in Meters constructed so that the valve will close when the water is drawn off to such a point as to render them 3 per cent. slow, the lights are liable to be extinguished by the closing of the valve by a sudden increase of pressure. To meet this difficulty, Mr. Pinchbeck has invented an ingenious and simple arrangement by which the action is reversed, and any such increase of pressure, in his Meter, raises the valve instead of depressing it. The fact of the improvement having been adopted by Messrs. W. Parkinson and Co. is a sufficient guarantee that it practically and effectually remedies the inconvenience it is designed to meet."—JOURNAL OF GAS LIGHTING.

PATENT IMPROVED DRY METER,

Which W. P. and Co. pledge themselves to manufacture with the same quality of materials and workmanship as in their Wet Meter, thereby giving Gas Companies and others the advantage of procuring a first-rate Dry as well as a Wet Meter, which, hitherto, they have been unable to do.

STATION-METERS AND GOVERNORS,

Which can be seen at all the London Gas-Works; also at Liverpool, Manchester, Sheffield, Nottingham, Belfast, Glasgow, Birmingham, Dublin, Bristol, Leeds, Leicester, Brighton, Southampton, Sunderland, Wolverhampton, Bradford, Norwich, &c., &c.

TEST GASHOLDERS, EXPERIMENTAL METERS, EXHAUSTER REGULATORS,

MINUTE CLOCKS, PRESSURE GAUGES, PHOTOMETERS, PRESSURE REGISTERS, &c.

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TO CORRESPONDENTS.

No notice can be taken of anonymous communications. Whatever is intended for insertion, must be authenticated by the name and address of the writer; not necessarily for publication, but as a guarantee of good faith.

SPECIAL NOTICES.

We have thought it expedient, at the commencement of another volume, to make a slight change in our pages, by abandoning the boundary rules by which they have hitherto been surrounded, thereby increasing the space available for matter to the extent of ten or twelve per cent.—an alteration which will, we hope, be acceptable to our readers, and enable us to keep down the accumulation of arrears of patents.

Subscribers who have not paid their subscriptions for the year 1869, or for any previous years, are requested to remit the same forthwith, in the manner indicated below, in order to prevent any interruption in the regular delivery of the JOURNAL; and such subscribers as desire to avail themselves of the reduction by paying in advance, must do so in the course of the month of January, 1870.

NOTICES.

The subscription to the JOURNAL is 15s. per annum, if paid in advance during the month of January, or 18s. credit, in two sums of 9s. each, in July and January of each year. Post-Office orders should be made payable at the Money-Order Office, London, to William B. King, 11, Bolt Court, Fleet Street, by whom the business department of the JOURNAL is conducted.

SCALE OF CHARGES FOR ADVERTISEMENTS.

Six lines and under . . . . . 3s. 0d.

Sixpence per line for every line additional.

Special contract for advertisements intended for continuous insertion.

The next number will be published on Tuesday, January 18, and the subsequent numbers on each successive alternate Tuesday.

This JOURNAL has been duly registered at the General Post-Office for transmission abroad.

Stamped copies, when forwarded by post, must be folded so as to expose the stamp; they are otherwise liable to the full postage charge for letters.

All communications for the Editor to be addressed, "No. 42, Parliament Street, Westminster;" and all remittances for subscriptions or orders for advertisements to the Publisher, No. 11, Bolt Court, Fleet Street.

THE JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, JANUARY 4, 1870.

Notes upon Passing Events.

THE retirement of Colonel Boxer from the manufacturing department at Woolwich has excited a great deal of comment, and, in our opinion, of somewhat misplaced sympathy. Colonel Boxer is a man who has deserved well of his country. We sincerely trust and believe that he retires from service with a very handsome independence, earned chiefly by his great inventive abilities, but partly also in consequence of his official position. Colonel Boxer, in his younger days, made great sacrifices, lived hard, without the luxuries, almost without the necessaries, of an officer of artillery, in order to perfect scientific inventions, the value of which our then uneducated War Office did not appreciate. The time came with the Crimean War when a demand arose for Colonel Boxer and his inventions. He was not only able to introduce his patents into our service, but he became in effect the Inventor-General for the British Army and other armies. He organized a scientific department, and had a profitable share in providing improvements and novelties in firearms great and small. As a commencement, this was very well; Colonel Boxer received substantial rewards for his ingenuity and tenacious industry. Perhaps he deserves further rewards; but, as we have before observed in reference to the operations of another clever and ingenious person—Mr. Reed, the Chief Constructor of the Navy—it is not consistent with national advantage that any one person should be the one official inventor of his own department—that one person should not only approve, patent, and sell his own contrivances to the nation, but sit in judgment on all the inventions, plans, and ideas sent in by inventors outside the official world. Under such an anomalous state of affairs the inventive official has an opportunity of condemning the plans of his rivals, snubbing their proposals, and making use for his own benefit of this or that part of their designs or inventions. Let us allow, as we will do willingly, that the inventing patenting official is the most honourable of men—human nature is frail—it is impossible to look with a favourable eye on what claims to supersede your own glory and profit; and it is equally difficult not to insensibly absorb the ideas submitted for your consideration. What we need in the mechanical and manufacturing departments connected with the army or the navy is a small committee of men thoroughly versed in the arts and sciences on which they have to give an opinion, but not engaged in the trades of an inventor or manufacturer. England is very rich in inventive talent, and our public departments ought not to be confined to the exclusive use of the inventive genius of one man, however clever. The whole talent of the kingdom ought to be at the service of the Government. There was a popular opinion amongst military men that it was useless to lay before Colonel Boxer's department at Woolwich anything in the shape of an improved cartridge, or ball, or fuse, because it would either be at once rejected or pirated. The impression may have been wrong, but it was universal. We know how hard it was for the inventor of the turret system to get a fair trial, because there was always some one at the Admiralty who wished to improve on Captain Cowper Cole's ideas. The history of the Fraser and Palliser controversy does not read nicely. It was found that Sir William Armstrong's position as both superintendent of the great gun manufactory and partner in the Elswick factory, did not work well. For these reasons Mr. Cardwell was perfectly justified in asking Colonel Boxer whether he was not purchasing for the Government, articles patented by himself, on which he received a royalty from the manufacturers. There is no reason that Colonel Boxer should not, in some capacity, render and be paid for the use of his inventive and constructive talents. Sir William Armstrong, no longer in office, continues to supply our Government with excellent guns. In considering Colonel Boxer's case, it must not be forgotten that he has been throughout the most fortunate of the inventors who have turned their attention to firearms great and small. All his experiments have been tried at Government expense; he has not expended a fortune before he could obtain a notice from Government; he has not expended time, patience, and temper in knocking at official doors, like the unhappy, ill-used Snider, and others too numerous to mention. He has been himself an authority, and the most powerful, to decide on the value of his own inventions. It is also notorious that, justly or unjustly, he was considered to have monopolized without acknowledgment the ideas and inventions of his subordinates, even when he did not snub them at the first suggestion. Indeed, it is commonly said that one man only—Sir

William Armstrong's successor—had the power and the pluck to work out his own ideas, in spite of Colonel Boxer's depressing influence. But then Mr. Anderson was not enlisted in the service; he was "dug out of a gas-work." These points are worthy of consideration, when the public seems likely to run wild in praise of a really clever man. Since writing these lines we have seen an article in the *Field* newspaper of the 1st inst., which, from independent authority and in greater detail, supports our views of Colonel Boxer's true position.

The case of Overend, Gurney, and Co., Limited, has occupied so many columns of newspapers, that it is difficult for people whose recollection does not go back to 1855 to understand "the "long and short" of this very complicated affair. Therefore space will not be wasted in making a plain story of the whole case. The Quaker firm of Overend and Gurney had been established nearly a century, when it ended in ruin and despair, which neither a favourable verdict, nor the sympathy of those whom "a "fellow feeling maketh wondrous kind," can wash out. Their business was that of money dealers—viz., to take care of other people's money, allowing interest on the deposit, and to discount bills at short dates, making their profit on the margin between the interest they paid and the sums they received by way of interest and commission on discounts. Having great success, their credit was boundless; they could have as much money as they cared to take in, and their profits were counted in tens of thousands and hundreds of thousands annually. But at some uncertain period this great house began to dabble in illegitimate trade, just as if a great silversmith had begun to be a purchaser of plate from doubtful sellers. It is said, and the stories are very circumstantial, that at one time forged bills were very often discounted and rediscounted, and that means were found, when the forging firms were tottering, to transfer to other discount firms the unprofitable and felonious customers. In one instance it is related that a great Quaker, now deceased, called in a forger, and said to him, with a significant look, "We have been looking at "the bills we have discounted for thee, and we do not like them; "now, unless within a fortnight thou payest off ten thousand of what "thou owest us, we must take very stringent measures." "But," said the, as yet, undetected felon, "you will give us a character "to another house?" "If thou findest any one inclined to take "thy account thou mayst send him to us," was the answer. Accordingly a discounting firm, anxious to do business, was found, and called in Lombard Street to make inquiries. The reply was, "I am too busy to talk to thee, but I will direct a clerk to show "thee Messrs. F. and T.'s account in our ledger, and thou canst "judge for thyself." The end was, that first ten thousand, and then another five thousand, went to the Lombard Street discount office; finally the bubble burst, and the criminal escaped transportation by flight. Now, what gives probability to this story is that in 1855, when, in spite of many secret obstacles, Messrs. Davidson and Gordon and Mr. Windle Cole were tried and convicted for forging dock warrants, the following facts were proved by the evidence of a partner and a clerk in the old firm of Overend and Gurney:—That these men, of whom Cole was the principal, and who had previously been bankrupt two or three times, were enabled to carry on business until they failed for nearly a million and a half, after a trading of five years; that of this they owed £120,000 to Messrs. Overend and Gurney, who held as security genuine and forged warrants and deeds of a distillery, which last were, under pressure, delivered up to the assignees for the benefit of the general estate; that in October, 1853—seven months before the discovery of the frauds caused by the bankruptcy of the conspirators—Mr. D. W. Chapman, a partner in the firm of Overend and Gurney (as he admitted on oath), discovered that the dock warrants on which they had made advances were most of them forged. Instead of at once stopping the career of such a criminal by arrest and prosecution, Mr. Chapman agreed to keep the secret on condition that the forger's balance was reduced. And they did reduce it in the seven months, according to the report of Quilter and Ball, by £8000, obtained on other forged warrants from produce brokers in Mincing Lane. These brokers discovered the fraud in March, 1854, and when collecting evidence for prosecution, sent a clerk with one of the fictitious warrants to Overend and Gurney (whose names appeared on Windle Cole's cheque-book) to ask for information. Mr. Bois, the head clerk in the loan department, replied that "his principals "never kept any account of goods when once they were taken "up"—a most improbable way of doing business—and he never dropped a syllable to lead the prosecutors, Laing and Campbell, to understand that Overend and Gurney then held warrants, of the nominal value of over a quarter of a million, similar in character to the one produced by Laing and Campbell's clerk. This fact was only dragged out of Mr. Chapman in the Bankruptcy Court.

It is a noticeable fact that the Messrs. Laing and Campbell, and other creditors who wished to investigate the affairs in bankruptcy of Messrs. Davidson and Gordon, of Windle Cole, and of several other bankrupt firms which had been propped up by Messrs. Overend and Gurney, always found themselves baffled by the official assignee, the celebrated Mr. Edwards. Recent investigations, which resulted in the dismissal of Mr. Edwards from his post, have shown that he was at the time in receipt of a salary of five thousand a year from Messrs. Overend and Gurney, ostensibly as a financial adviser. In this capacity he recommended business to them on which they lost some two or three millions. It now seems doubtful whether this salary was not partly for services in keeping matters dark in the Bankruptcy Court, or later as hush-money to prevent his disclosing to the world the real state of affairs of the great Quaker discount-house. At any rate, by a system of commercial "plunging," by advancing, at the most usurious rates of interest, money on such inconvertible securities as steam fleets, ship-building docks, unfinished railways, and other desperate ventures of penniless adventurers, the firm, weeded of Mr. David Ward Chapman, and with Mr. Edwards pensioned off with a good character, found itself with four millions of bad debts on its books, practically insolvent to the extent of ten shillings in the pound, but with a fine false credit and a large legitimate business. It was the year of joint-stock companies, and one more swindle, in the shape of a rotten concern bought at a large price for goodwill, was added to the many floated in that year. The question that arises is, ought Messrs. Gurney and Birkbeck to be punished for their share in a transaction which absorbed the savings and totally ruined hundreds of the most helpless members of the community? Respectable men were found to launch the company, to invest large fortunes in it, and to take it for granted that, in the end, Messrs. Gurney and Birkbeck would be solvent. Messrs. Gibbs, Rennie, Barclay, and Gordon were careless and credulous, but nothing worse. They seem to have made no bargain for themselves, and they all lost their money. In a court of bankruptcy they would have been entitled to a second-class certificate. The public rushed in for the shares of "Overend, Gurney, and Co., Limited," which soon reached £9 premium, and then, after a brief struggle, the bubble burst, and the concern, in which germs of corruption had been spreading for fifteen years, came to the ground as rotten as a mighty fungus. As for a conviction, there never was a chance of it even had there been a stronger case. But as to the sympathy expended on the Gurneys, we may quote from a celebrated writer on the French Revolution, and say, "You admire the plumage, "but forget the dying bird." You pity these ex-millionaires, but forget the widows, the orphans, the clergymen, the retired officers, whom wicked usurious speculations and dishonest suppression of truth brought to absolute beggary.

The decision of the Corporation of London to resist to the uttermost the revised plan of the Metropolitan District, for making a terminal station at the Mansion House, contradicts in a very singular manner the theory that the Corporation represents not only the residents and shopkeepers within the City boundaries, but the daily visitors who come to carry on the vast mercantile and financial transactions. This theory, founded on the statistics of City traffic first published in one of Mr. W. Haywood's reports to the Commissioners of Sewers, was enlarged in a long, dull, unquotable pamphlet by Mr. Chamberlain Scott, which was printed with great luxury of type and paper, and widely circulated. It is, perhaps, as well that the incurable dulness of Mr. Scott's style caused the thing to come into the world still-born. Aldermen and Common Councilmen carried the handsomely bound copies about in their pockets, but no paper of any influence was able to carve out a telling paragraph. Now that all the bankers, all the great merchants, all the produce brokers—in a word, all the commercial capital of London—are on one side, and the great majority of the Common Council are on the other, it is undeniable that the commercial interests of the City of London are not represented in the Guildhall parliament. It is commonly believed that a large number of the Common Council have invested on the route to Tower Hill, in the expectation of profit from compensations which City juries award with such extraordinary liberality. There is, however, an alternative scheme for completing the inner circle by extending it to Bow, and thus forming a much needed junction with the North London Railway. The London and North-Western Company, acting on the maxim of better late than never, have quietly arranged to bring their station forward through Euston Square, so placing their frontage on a level with its great rival, the Midland. Thus, it is to be presumed, dark and inconvenient Euston Station, with its ponderous and meaningless architectural front, will be replaced by something meant more for use and less for show than Mr. Hardwicke's abortion. The advance to Euston Road will not replace the advantages lost by the inconceivable folly of the managers of the London and North-Western in refusing the offer of a junction with the Underground, but it will be an important concession to the interest of season-ticket holders whose business lies west of King's Cross.

The tramway companies are making immense claims for parliamentary powers of extension. We are looking forward anxiously to see this apparently cheap system of street railways in action. If it answers in London, it supplies a want beyond the reach of ordinary railways either overgronnd or underground. The success of street tramways will compel the omnibus companies to come to terms of amalgamation. The two cannot work in competition in the same direction, as the directors of the omnibus company will soon find out.

In railways construction, the whole civilized world is learning a lesson from the Americans. Their Pacific line, made in the roughest and cheapest manner, and only intended to last a couple of years, is the right way of ripping up an agricultural country, and, by developing its resources, creating the means for more perfect lines. The Indian and Australian Governments are studying this side of the question, no longer embarrassed by the weighty opinions of engineers of the old school. We understand that schemes are afloat for railways on the American system in Hungary and the Danubian Provinces, which would at once give a money value to millions of acres of land capable of growing corn crops year after year, which are now sparsely fed over by a few wandering herds and wild beasts. On some tracts of Hungary where corn has been grown, in very bountiful years, for want of means of conveyance—viz., carts and ponies—the grain has been ploughed in for manure.

Education will, no doubt, form one of the subjects of earnest and even acrimonious debate in the House of Commons during the session of 1870. On what principles should the additional funds about to be applied to educational purposes, either from the rearrangement of old foundations or from Parliament, be expended? Mr. Roebuck, who, with all his faults of temper, has the merit of hating and proclaiming his hatred of claptrap, hit the right nail on the head, in reference to education for the children of working men, when he said:

> We are told daily that the object of educating the working man is to give him power to raise himself from the condition of a working man. Now, that is not my view. My view is this—to give him that education, not to lift him from his sphere, but to make him happy in it. And while so doing, while making him happy in his sphere, let him take every opportunity of the learning that is given him to raise himself out of it; but the chief design is to teach the working man to be happy as a working man. Let me illustrate this. George Stephenson was a working man. Now, on the day George Stephenson was born into the world were also born many millions of working men. How many out of these millions raised themselves out of their sphere? A very very small number. George Stephenson so raised himself, but the millions remain; and is it not a much more worthy object to make the millions happy in their station than to make one famous?

This is the wisdom of a statesman, and this points in another direction to the error of making schools hotbeds for the growth of two or three clever boys every year, to the neglect of all the rest. Another sound principle has been laid down and carried out in the middle-class schools founded by the Rev. William Rogers. The boys educated at this school are intended to leave at about fourteen years of age. Latin, of which up to that age they could only obtain a smattering, is not to be taught at all, but English is to be taught with all the details of a dead language. It is impossible to exaggerate the advantage of giving boys—for the most part the children of illiterate parents, without access to books—an insight into English literature, with examples from the greatest authors in prose and poetry, from the time of Chaucer to Queen Anne. Physical sciences also are to be cultivated alongside the plain learning that helps to get a living in the workshop and the counting-house. Dr. Lyon Playfair, in a letter addressed to Mr. Rogers, in recommending that from twelve to fifteen thousand pounds should be expended "in erecting buildings containing chemical laboratories and scientific museums in relation to commerce," to be open to the school during the day, "and to the working classes in the evening," observes:—

> No boy with such advantages need leave the upper classes of the school without being able to examine the various kinds of merchandise which he will meet with in his occupations, so far, at least, as would enable him to test chemically their relative excellences or detect their adulterations. No boy need then leave the school without having had his physical and political geography copiously illustrated by objects of natural history, in their relation to the imports and exports upon which the prosperity of the country so largely depends. Abroad we see much larger sums spent in the erection of mere chemical laboratories to advance the industrial education of the people. Berlin and Bonn have recently erected them at the expense of £50,000 each, and Leipzig, I understand, at a cost of about £30,000. The much smaller sum that I have indicated as sufficient for your wants might be subscribed in a single day by such wealthy corporations as the Goldsmiths, Grocers, Mercers, Haberdashers, Fishmongers, Drapers, Skinners, Merchant Taylors, Clothworkers, and Salters Companies. They have expressed themselves zealous and willing, and I am sure could not engage in a more profitable expenditure.

To this appeal might properly be added one for creating a library of reference for each of the middle-class schools. It is a disgrace to the City, with its vast funds spent on eating and drinking, that it does not possess one of those free libraries which are to be found not only in Liverpool and Manchester, but in the colonial city of Melbourne. As to the education of the youth who is not intended for the three learned professions, who does not intend to compete for the great prizes offered by our old Universities, the *Times* has put his requirements very neatly, in an article on military education, in the following passage:—

> The successful scholar of the present time is an excellent Grecian, not so good a Latinist, and possesses, perhaps, but an imperfect acquaintance with any modern language. If he is a good mathematician, he is probably nothing else, and his mathematics may not include the practical arithmetic of every-day life. Suppose, instead of this, the model scholar of ten years hence were to be a thorough master of English, tolerably well acquainted with Latin, able to converse in French, and competent to apply the principles of arithmetical calculation on any scale to questions of finance—would he not thus be more perfectly as well as usefully accomplished than the scholar of the present day? If this question be answered in the affirmative, our schools have the matter in their own hands.

The Town Council of Leicester has sanctioned the proposition to engage the services of Mr. Baldwin Latham to visit Leicester, and to prepare a preliminary survey and report upon the possibility of utilizing the town sewage, and rendering it profitable to the borough. By taking this step the council will at least know what difficulties are in the way, and how they may be surmounted. Of this there remains no doubt on the minds of those who have practically acquainted themselves with the subject—that in grazing districts, where food for cattle is constantly required, the introduction of the sewage irrigation system is of great value and importance. It is one of the greatest discoveries of modern times, that the very refuse of populous places may be conveyed from them to the neighbouring fields, and be there made useful in increasing the produce of the earth; that earth proving at the same time the best purifier of the liquid sewage, the effluent water leaving its surface having a pellucid purity.

THE GAS BILLS FOR 1870.

Thirty-four gas Bills will be brought before Parliament in the coming session. Twelve of these are applications from statutory companies for further powers; thirteen are for the incorporation of companies carrying on works without statutory powers; two are applications from local authorities to erect competing works; five local authorities apply for power to purchase existing works, and two belong to the class of filibustering Bills, promoted by mythical companies without works, and with no serious intention of erecting any.

We have already noticed two of the first class, those of the *Gaslight and Coke Company* and the *Great Central Company*, and need not further allude to them.

The *Brighton and Hove General Gas Company* again apply for authority to acquire land between New Shoreham Harbour and the sea, for the erection of works.

The *Cardiff Gaslight and Coke Company* seek for power to extend their limits by including the parishes of Cogan, Whitchurch, Radyr, and St. Fagan's, and to raise additional share capital of £100,000, the dividend on which is limited to 8 per cent. if ordinary, and 6 per cent. if preference shares. They also apply for power to borrow in all £25,000, and to create and issue debenture stock. After the 1st of January, 1871, the illuminating power of the gas is to be 14 candles instead of 10, and the price is to be lowered 1s. per 1000. Power is also sought to manufacture residual products, and generally for the manufacture of and dealing in everything connected with gas-works and the supply of gas, and to hold licences under patents for inventions relating to the manufacture and supply of gas, and the utilization of residual products. In future, the qualification of a director is to be the possession of twenty £25 shares, or stock to the amount of £500; but directors now in office are not to be disqualified by the passing of the Act, nor are any to be disqualified by reason of their being concerned in any contracts with the company. The usual powers to require security, to inspect and remove meters and fittings, to punish fraud, &c., are asked.

The *Chester United Gas Company* apply for authority to raise £20,000 additional share capital, with dividend limited to 7½ per cent. on ordinary, and 7 per cent. on preference shares; to borrow in the whole £5000 on mortgage, and to create debenture stock.

The *Halifax Water and Gas Extension Bill*, promoted by the Corporation, so far as it is concerned with gas, applies for power to enlarge old and erect new works with money which may be borrowed under the authority of former Acts. There is a section authorizing the Corporation on the one hand, and the trustees of turnpike roads on the other, to enter into contracts for lighting highways within the district, and another section saves the rights of the Elland-cum-Greetland Gas Company.

The Bill of the *Imperial Continental Gas Association* repeals the Act 16 & 17 Vict., c. 190, renders void the existing copartnership deed, and reincorporates the association subject to all existing claims and liabilities. The preamble recites that the present capital of the association is £1,400,000, in 28,000 shares of £50, on each of which only £6 5s. is still due; and that the association have expended on their various undertakings a further sum of £1,225,000, provided out of divisible profits. This latter sum it is intended to capitalize, and divide among the present share-

holders. After the passing of the Act the nominal share capital of the association will be £2,800,000, the additional £1,400,000 being deemed fully paid up to the extent of £43 15s. per share. After providing for the distribution of these shares rateably among the present shareholders, the Bill authorizes the issue, with the consent of three-fourths of the shareholders present at a general meeting, of new shares of £50 each to the extent of £700,000 such shares to be disposed of as the meeting may direct, or, in default of special direction, to be apportioned among present holders. If on such apportionment any shareholder become entitled to a fractional part of a £50 share, the dividends thereon are to remain in abeyance until, by the addition of other fractions, an entire share is made up. It is further provided that, with the consent of a general meeting specially convened, money may be transferred from the reserve-fund, either to increase rateably the sum paid on existing shares, or to be placed to the credit of new shares. Power is also given to raise £300,000 on debentures or bond. Other sections nominate the president and directors of the association, and disqualify directors for non-attendance at meetings.

The *Leeds Gaslight Company* seek to enlarge their district by adding thereto the township of Adel, and a portion of the township of Rothwell, to acquire additional land, to raise £100,000 new share capital, with dividend limited to 6 per cent., or 5 per cent. if on preference shares; and for power to borrow in all £25,000, under the usual restrictions.

The *Reading Gas Company* apply for power to extend their limits by including the parish of Shinfield, in Berkshire, and Mapledurham, in Oxfordshire, and to raise additional capital of £40,000 by the creation of new shares, which are first to be offered by public auction, the reserved price at the sale being neither more nor less than the nominal amount of the shares. Any premiums received at such sale are to be applied to the purposes of the company, but the money is not to be considered capital entitled to dividend. Shares not sold by auction are to be offered to the shareholders at par. The dividends on this new capital are limited to 7 per cent. if ordinary, and 6 per cent. if preference shares. No deficiency of dividend can be made good after the expiration of two years from the time it occurred. Money may be set aside out of profits to form a fund for contingencies not to exceed £2000, but not more than 1 per cent. on the paid-up capital can be so set aside in one year. The reserved fund is to be £6000. One-fourth of the amount of the additional paid-up capital may be borrowed under the usual restrictions, but a special section forbids the conversion of borrowed money into capital. Debenture stock may be issued. Power is to be given to sell the existing works and erect new on a specified site; to manufacture residual products, meters, &c., and to hold licences under patents.

The *Rotherham Gaslight and Coke Company* apply for power to raise £60,000 additional capital by the creation of new shares, to borrow in all £15,000 under the usual restrictions, and to create and issue debenture stock. The dividend on preference shares is not to exceed 6 per cent.; that on ordinary shares is to be regulated according to the price charged for gas, the minimum specified being 7 per cent. when gas is 4s. 6d. in Rotherham and Kimberworth, and 5s. 6d. in the remainder of the district; and the maximum, 10 per cent., when the price of gas does not exceed 3s. 6d. and 4s. 6d. in the specified districts. The illuminating power of the gas for the future is to be 14 candles. The Bill further seeks the usual powers to inspect meters, to remove fittings, &c., to punish fraud, and to recover debts.

The *St. Helen's Gas Company* seek authority to raise £92,000 additional capital in £10 shares, to borrow £11,500 in respect of their present capital of £46,000, and also £23,000 in respect of the additional capital—the latter sum, of course, under the usual restrictions. Power is likewise sought to issue debenture stock. The limits of supply are to be extended, by including the townships of Ashton-in-Mackerfield, Haydock, Rainhill, and Whiston, in which districts the gas may be charged 1s. more than in the old district of the company. As regards Rainhill, however, it is provided that, if the company lay down pipes to supply any part of that township now supplied by Messrs. Melling and Son, those gentlemen may compel the purchase of their undertaking by the company. Unless prevented by frost, deficiency of coal, or other unavoidable cause or accident, or during necessary repairs occasioned by such accident, the gas is to have an illuminating power of 14 candles, and to be free from sulphuretted hydrogen. The company are to provide a testing-place, and two justices, on complaint of five consumers, may order an examination, which is to be made at any reasonable hour in the daytime, in the presence of some officer of the company. A fine of £20 may be inflicted for proved deficiency, or for obstructing the examiner. It is also provided that the company may manufacture or deal in fittings, &c., and use patents.

The *Shipley Gaslight Company* also desire to extend their limits of supply by including several townships, parts of townships, and places described in a schedule; and to this end seek power to raise £52,000 additional share capital, the dividend on which is limited to 7½ per cent. if ordinary, and 6 per cent. if preference shares. Power is also sought to borrow £13,000 in respect of this additional capital under the usual conditions, and to issue debenture stock at interest not exceeding 5 per cent. It is provided that the company may purchase by agreement any existing works within the new districts, may buy additional four acres of land, and sell superfluous land and works. The gas supplied is to be of 14-candle power. The company is to erect a testing-place at the works, and any five consumers may appoint an examiner, who, after giving 12 hours notice to the company, may enter the premises in the daytime, and make an examination, and, on proved deficiency or obstruction, two justices may inflict a fine of £5. Various other customary powers are sought. In the section relating to the utilization of residual products, the manufacture of dye wares is specially included.

The thirteen applications for incorporation from companies without statutory powers are as follows:—

That of the old *Aberdare Gas Company*, hitherto carried on under a deed of partnership. The Bill invests the new company with all the property of the old, subject to all the rights, claims, and liabilities. The clear value of the property of the old company is estimated at £14,000, which is to be considered the original capital, beyond which the Bill gives power to raise additional £6000, in shares of £10. The dividend payable on these new shares is not to exceed 7½ per cent. if ordinary, or 6 per cent. if preference. Power is sought to borrow £3500, with the usual restrictions, and also to create debenture stock with a preferential interest not exceeding 5 per cent. The price of gas is not to exceed 4s. per 1000 feet, it is to have the illuminating power of 14 candles, and to be so far free from sulphuretted hydrogen and ammonia as not to discolour lead or turmeric paper when exposed for one minute to a stream issuing under a pressure of 5/10ths of an inch of water. The company are to find a testing-place, and tests may be made by order of two justices on requisition of five consumers. The penalty for deficiency of illuminating power is not to exceed £20. Nothing is said about excess of impurity. The company are limited to the supply of so much of the parish of Aberdare as lies within a radius of 2½ miles from the church of St. Elvan. Local authorities are to provide their own posts and lamps, and if they elect to burn by meter are to light and extinguish the lamps. The Aberdare Local Board may compel the supply of certain districts under specified conditions.

The *Airedale Gas Company, Limited*, apply to be incorporated. The original capital of the company is £21,000, in £5 shares, and it is now sought to raise £9000 by the creation of new shares of the same amount. At present the company are without mortgage debt, but power is applied for to borrow £5000 in respect of the original capital, and £2000 in respect of the new. No limitations as to the dividends are imposed. Gas of 14-candle power is to be supplied, the price of which is not to exceed 4s. 7d. The company are to maintain a testing apparatus, and Local Boards and two justices may order an examination. Any officer of the company obstructing an examiner is to be liable to a fine of £10, and the company are liable to a penalty of the same amount for any deficiency of illuminating power. No provisions as to impurities are made.

The *Brecon New Gas Company, Limited*, apply to be incorporated. The original capital was £6000, and the Bill authorizes the raising of £4000 more, in £10 shares or stock. There is a singular provision that no person shall hold in his own right more than twenty shares or £200 stock. The dividend on the original capital is limited to 10 per cent., and on the new to 7 per cent., or 6 per cent. if the interest be preferential. Power is asked to borrow £2000 in respect of the original capital (which is to include £900 already borrowed by the limited company), and a further sum of £1000 in respect of the new capital, and also to issue debenture stock. There is another novel provision which limits the charge for gas to 4s. 7d. per 1000 feet to consumers who pay cash within a month from each quarter-day, and allows 5s. 10d. to be charged to those who take longer credit. The gas is to have the illuminating power of 12 candles. No conditions as to impurities are imposed.

The *Buxton Gas, Coke, and Coal Company, Limited*, apply to be incorporated and empowered to make and supply gas, and everything connected with the manufacture and distribution, and also the utilization of residual products. The present capital is £7390, in £10 shares, and the company have accumulated £739 of undivided profits. It is now proposed to capitalize this latter sum, and for each £10 share to issue one of £11. Thus the original capital of the company will be £8129, in addition to which it is proposed to raise £11,871 in ordinary shares of £10 each, making the capital of the new company £20,000. The dividend on the new capital is not to exceed 7½ per cent. Power is applied for to borrow £2000 in respect of the original capital, and a further sum

of £3700 in respect of the new. The price of gas is limited to 5s. within a mile of the works, and 6s. beyond that distance. The gas is to have the illuminating power of 14 candles.

The *Carmarthen Gas Company*, started in 1822 as a partnership, now seek to be incorporated. The property of the company is valued at £8000, which sum, divided into £10 shares, is to form the original capital of the new company; and power is sought to raise additional capital, not to exceed £6000, in shares of £10 each. The dividend on new and original capital is limited to 7½ per cent., and to 6 per cent. if the new shares be preferential. Borrowing power to the usual extent of one-fourth of the capital is applied for. The interest on debenture stock, if issued, is not to exceed 5 per cent. The price of gas is not to exceed 4s. 6d. per 1000 feet; it is to have the illuminating power of 14 candles, and the pressure is not to be less at any time, at any point within the limits of supply, than that due to an inch of water,

The *Eccleshill and Bolton Gas Company, Limited*, also apply for incorporation and various powers. The capital of the company is to be £20,000, in 4000 shares of £5 each, but power is asked to raise from time to time additional capital to the extent of £10,000, by the issue of new shares or stock, on which the dividend is not to exceed 7½ per cent., or 6 per cent. if the interest be preferential. The usual borrowing powers, and also the authority to issue debenture stock, are applied for. The price of gas is not to exceed 5s., and the illuminating power is to equal 14 candles. Five consumers may appoint an examiner without application to a justice of the peace, and deficiency of illuminating power being proved, two justices may inflict a penalty of £5.

The *Hebden Bridge Gas Company*, originally carried on under a deed of settlement, and subsequently registered under the Joint-Stock Companies Act, apply to be dissolved and reincorporated. The capital of the limited company is £15,000, in so many £1 shares, 8500 of which have been issued and fully paid up. It is now proposed to raise the capital to £25,000, in 5000 shares of £5 each, 1700 of which are to be appropriated to the present registered proprietors. Half shares are to be provided to make up odd numbers. The remainder may be issued from time to time, and put up to auction, any premiums realized being considered profits of the company. Shares not sold are to be distributed as any general meeting may direct. Power is asked to borrow one-third part of the amount of capital for the time being, and also to issue debenture stock at not more than 5 per cent. No limits are placed on the dividends to be paid. The price of gas is not to exceed 5s. per 1000 feet; it is to have the illuminating power of 12 candles, is to be practically free from sulphuretted hydrogen, and is not to contain more than 20 grains of sulphur in any form in 100 feet. A penalty of £20 may be inflicted for deficiency of illuminating power, but no mention of impurities is made in the penal section.

The *King's Lynn Gas Bill* incorporates a company to take over the works, &c., of Mr. John Malam. The capital of the company is to be £32,000, in shares of £10 each, and power is asked to borrow £8000 when the whole of the capital is subscribed for and half paid up. No application is made in this Bill for power to issue debenture stock, and no limitation is placed on the amount of dividend to be paid. The price of gas is not to exceed 4s. per 1000; it is to have the illuminating power of 14 candles, and a penalty of £10 may be imposed for any deficiency of power. One section reserves to the Corporation or Paving Commissioners of King's Lynn power to purchase the undertaking of the company by agreement.

The *Newport* (*Isle of Wight*) *Gas Bill* is intended to incorporate a company to take over the works now supplying Newport, Carisbrooke, Whippingham, and St. Nicholas. The capital of the company is to be £20,000, in shares of £10 each, but power is applied for to raise from time to time new capital to the extent of £10,000, the dividend on which is not to exceed 7 per cent. if issued in ordinary shares, or 6 per cent. if preference. Power is also sought to borrow one-fourth of the amount of capital for the time being, on the usual conditions, and to issue debenture stock at interest not exceeding 6 per cent. The price of gas is not to exceed 5s.; it is to have the illuminating power of 14 candles, and a forfeit of £5 may be imposed for deficiency in power. No mention is made of impurities.

The *Rainhill Gas and Water Bill* proposes to incorporate a company for the purchase and extension of the undertakings of Mr. Melling. The capital is to be £15,000, in £10 shares. It is intended to supply 18-candle gas, charging for the first three years 6s. 8d. per 1000. The gas is to be free from sulphuretted hydrogen, and is not to contain more than 5 grains of ammonia nor more than 20 grains of sulphur in 100 feet. A fine, not exceeding £5, may be imposed for deficiency of illuminating power or excess of impurity. Power is sought to agree with the St. Helen's Gas Company (who, as will be seen above, may be compelled to purchase these works) and with other companies to supply gas.

The *St. Alban's Gas and Water Company*, started in 1852 under a deed of settlement, and subsequently registered under the Joint-Stock Companies Act, apply to be dissolved and reincorporated to carry on the business of a gas company only. The capital is to be £10,000, in £10 shares, one of which will be exchanged for every two £5 shares in the old company, half shares being provided to meet the case of shares held singly or odd numbers. Power is asked to raise £18,000 of additional capital in £10 shares. The dividend on the original capital is limited to 7½ per cent., and on the additional to 6 per cent. The illuminating power of the gas supplied is to be 13 candles, tested by Sugg's new London burner, and the maximum price is to be 5s. 6d. per 1000. Power to borrow to the usual extent is applied for.

The *Wrexham Gaslight Company*, hitherto carried on under a deed of settlement, apply for incorporation and all the usual statutory powers. The capital is to be £50,000, of which £12,000, representing the present paid-up capital, is to be converted into stock, and distributed rateably among the present shareholders. The remainder is to be raised by the creation of £10 shares. No limitations are placed on the dividends. The usual borrowing powers are applied for. Fourteen-candle gas, free from sulphuretted hydrogen, is to be supplied for 4s. 6d. within a mile from the parish church, for 5s. within two miles, and for 5s. 6d. beyond this distance.

The *Yeovil Gas Company*, now incorporated under the Companies Act, 1862, apply to be dissolved and reincorporated with statutory powers. The capital of the present company is £11,200, which is divided into 280 shares of £30 each, and an equal number of £10 shares. These, the "old shares," remain vested in the present proprietors. Power is applied for to raise additional capital to the extent of £13,800. The dividend on the old shares is limited to 10 per cent., and on the new to 7 per cent. if ordinary, and 6 per cent. if preference. Fourteen-candle gas is to be supplied for 5s. per 1000 feet.

It is unnecessary to state that in each of these Bills all the customary statutory powers are applied for.

Two Bills are promoted by corporate bodies to acquire power to erect works and supply gas.

The *Leeds Corporation Gas and Improvements Bill* is to give the Corporation power to borrow for the purpose of the gas supply £495,000, which may be made into a funded debt, secured by the works, lands, and revenues of the undertaking, the holders to receive annuities fixed by the Corporation. After the expiration of ten years the Corporation is to commence a sinking-fund for the redemption of the mortgages or annuities. The gas supplied is to have the illuminating power of 16 candles. No limitation of price is made, and no conditions as to the purity of the gas are imposed. If deposits are required from consumers, interest at the rate of 4 per cent. is to be paid after six months. The Bill is to give the Corporation all the powers usually accorded to gas companies, and also power to levy an equal "gas-rate," not to exceed 1s. 6d. in the pound.

The *Sheffield Corporation Gas* (*New Works*) *Bill* is to give the Corporation power to raise £300,000 for the purposes of the Bill, by granting perpetual annuities, or by mortgage, or in both ways. These annuities may be purchased by the Corporation, and either held or extinguished. Further power is asked to borrow another £300,000 on the security of the works, with the borough rates and fund as collateral security. After two years a sinking-fund is to be commenced, to pay off the mortgages and redeem the annuities. A contingency-fund is also to be formed. Any balance of profits may be applied in reduction of rates, or for borough improvements. Gas of 18-candle power is to be supplied, and the price is not to exceed 3s. per 1000 feet. A fine of £5 may be imposed for deficiency of illuminating power.

As our readers know, the Corporations of Leeds and Sheffield are also promoting Bills for the purchase of the existing companies. That of the Corporation of Leeds asks power to borrow £950,000, on the security of the lands, works, and property to be acquired, and the rents and revenues to be levied and received. This may be made into a funded debt, as provided in the Bill above mentioned. The interest to be paid is not stated; it is to be fixed by the Corporation. A sinking-fund, for the redemption of the annuities and mortgages, is to be commenced after two years. Any balance of profits may be carried to the credit of the Corporation, and applied for general purposes. No limit on the price of gas is fixed by this Bill. The quality is to be the same as before mentioned. The purchases under this Bill are to be made by agreement with the companies.

The *Sheffield Gas Corporation* (*Purchase*) *Bill* provides for the compulsory purchase of the company by arbitration, according to the Railway Companies Act of 1859, perpetual annuities being granted to the shareholders in respect of their shares. These annuities may be purchased by the Corporation, and either held or extinguished. Power is asked to borrow on the security of

the gas-works, with, if thought fit, the borough rates and funds as collateral security, a sum of money equal to the amount which the company have already raised, or have power to raise, and such further sums as the Corporation may think requisite for the purpose of purchasing all or any of the annuities. A contingency and a sinking fund are to be formed; and it is here again provided that any balance of profits may be applied in reduction of rates or for borough improvements.

The *Cleckheaton Local Board* promote a Bill to enable them to complete the purchase of the undertaking of the Cleckheaton Gas Company, under an agreement already entered into between them. The consideration is £23,562, and the Board apply to borrow for the purposes of the Act a sum or sums not exceeding £40,000, on mortgage of the works and revenue of the gas undertaking and the general rates leviable by the Board. A general district-rate, to be called the "gas-works rate," may be levied by the Board, but it is never to exceed 1s. in the pound in one year. Fourteen-candle gas is to be supplied, and the price is not to exceed 4s. 6d. Nothing is said of impurities.

The *Paisley Gas Bill* is intended to transfer the gas-works from the Board of Gas Commissioners to the magistrates and Town Council. The present shareholders in the Paisley Gaslight Company are to receive perpetual annuities at the rate of 6½ per cent. upon the amount paid up, to be called "Paisley Corporation Gas Annuities." These the Corporation may redeem by paying the annuitant 25 years purchase, the money being provided by a sinking-fund. In case of any deficiency of funds for payment of the annuities, the Corporation may levy a "gas guarantee rate," not to exceed 4d. in the pound on yearly value. Power to borrow on mortgage £15,000 is applied for, and also to resolve the whole of their borrowed money into a funded debt, the holders to receive 5 per cent. interest. The annuities may be redeemed by the Corporation, after giving six months notice, by payment of principal and a premium of 10 per cent. The provisions of the Bill with respect to these matters are numerous and complicated. Gas of 25-candle power is to be supplied at 4s. 2d. per 1000 feet. Any balance of profit, after providing for the necessary expenses and various funds, may be applied to town improvements.

The *Yeovil Improvement Bill* contains sections giving the Corporation power to purchase, if they wish, within three years, the undertaking of the Yeovil Gas and Coke Company by agreement, or, if necessary, by arbitration.

Lastly we have to notice the two filibustering Bills before alluded to. The first is the *Belfast Consumers Gas Bill*, the preamble of which sets forth that the supply of gas in Belfast and the neighbourhood is defective and unsatisfactory to the inhabitants thereof, and that several persons named are anxious to improve it, and consequently desire incorporation and the usual powers. The Bill itself promises 14-candle gas, free from sulphuretted hydrogen and ammonia, at the maximum price of 3s. 6d. per 1000 feet. It proposes to raise £100,000, in £10 shares, which may be divided into preferred halves and deferred halves, but not before 60 per cent. has been paid up, and then 50 per cent. is to be carried to the credit of the deferred half, which is thus fully paid up. The usual borrowing powers and the power to issue debenture stock are claimed, and all the customary powers accorded to gas companies.

The *King's Lynn Consumers Gas Bill* bears a family likeness to the foregoing. The capital set down is £30,000, in £10 shares, divisible as in the Belfast case; 14-candle gas is promised at 4s. per 1000 feet. As neither of these bills is likely to be pressed forward, if seriously opposed, they need not be further noticed. The object sought in both cases would probably be best obtained if the companies they are intended to oppose bought off the opposition.

Circular to Gas Companies.

THE long and anxiously expected Dundee gas awards have at length been made. On the 24th ult. the umpire intimated to the agents of the parties that he was prepared to deliver them; and scarcely was the ink of his signature dry when both parties applied to take them up, and to pay the arbitrators and umpire's charges. These amount, on the two awards, to £6135 6s. 4d., including the fees of their agent and the charges for taking and printing the minutes of evidence. The result was flashed through the wires to Dundee, where a meeting of the commissioners was instantly called, and the figures announced. In another column we reprint the report of this meeting, and also the leading articles on the subject from the two principal local papers, one of which has always taken the commissioners views on the subject, and the other those of the companies.

In the case of the Dundee Gas Company, it will be in the recollection of our readers that the annuities claimed ranged from £14,008 to £14,875. The annuity awarded is £6125, which will yield the company 7 per cent. on £50,000, the amount of the "new shares," and 8·84 per cent. on their original capital of £29,687 10s., upon which the dividends were not limited. It may be stated here that, in addition to this annuity, the company has a large sum to divide in cash, arising from the realization of the gas and meter rents due at the time of the transfer of the works to the commissioners, stock in trade, and cash in hand, amounting, probably, to upwards of £20,000.

The maximum dividend paid in any year by this company, from its formation till 1867, was only £3750; but in the following year, under the direction of an astute accountant, certain changes were made in their system of book-keeping, which induced them, in 1868, to declare dividends amounting to £7325 12s., equivalent to £22 2s. 1d. per cent. on the original capital, and 7 per cent. on the new capital then paid up. The object of this change of system was so clearly to lay the foundation for exaggerated claims before the arbitrators, that the failure to effect its purpose cannot be wondered at.

In arriving at his decision, the umpire has apparently taken as his basis the figures and the system presented by the witnesses called by the Gas Commissioners, reducing to some extent the sums charged on the delivery of coal, general repairs, bad debts, repairs of meters, risks and casualties, dilapidations, and renewal and reproduction fund. He has also moderated the pruning-knife of the taxing-master, or auditor as he is called in Scotland, and allowed the company £6401 2s. 5d. in respect of their costs of £10,593 7s., which on taxation had been reduced to £3098 3s. 7d.; so that, on the whole, the company have been liberally dealt with. The annuity awarded represents 1s. 1·97d. per 1000 feet on the gas sold in the year preceding the transfer.

In the case of the Dundee New Company, the annuities claimed ranged from £5325 to £5683. The annuity awarded is £2537 10s., which will yield the company 4·61 per cent. on their total share capital. In addition to this the commissioners have to pay off the company's mortgage and other debts, amounting to £18,119 4s. 7d., the interest on which at 4 per cent. is £724 15s. The costs of the arbitration payable by the commissioners are taxed at £3018. The maximum yearly dividend paid by this company up to 1867 was £2000; but, under the able guidance of the accountant called in by the old company, the dividend of the new company was in 1868 increased to £2938 3s. 6d. The umpire appears to have given this company the full benefit of the illegal agreement entered into by them with the old company, as on no other hypothesis can the large annuity awarded be accounted for.

We confess that we are not quite able to reconcile these two awards with each other, as on applying the figures of 1s. 1·97d. per 1000 feet of gas sold by the old company to the case of the new company, and deducting the interest on the mortgage and other debts, there only remains £2257 15s., or £279 15s. less than the annuity awarded. Possibly the superior condition of the new company's works and some surplus land may account for the difference; but then, on the other hand, their ground-rent or feu-duty is larger than that of the old company, and their payment to the town higher. Adding the interest on the mortgage and other debts to the annuities awarded to the new company, the total amounts to 1s. 3·28d. per 1000 feet of gas sold in the year preceding the transfer.

As to the effect of the transaction on the interests of the community of Dundee, we should be sorry to disturb the jubilant spirit with which the awards have been received, but it may be as well to say a few words on that question. The awards and their concomitants impose an annual charge on the community of £10,987 5s., distributed as follows:—

Annuities of the old company . . .	£6,125	0	0
,, of the new company . . .	2,537	10	0
Interest on mortgage and other debts of new company	724	15	0
Interest on £40,000 borrowed for carrying on the works and paying costs .	1,600	0	0
	£10,987	5	0

This sum is equivalent to 1s. 5·85d. per 1000 feet of gas sold by both companies in the year preceding the transfer, which, added to 3s., the normal cost of producing and distributing 1000 feet of 25 or 26 candle gas in Dundee, gives in round figures 4s. 6d. as the price the commissioners must charge to cover their expenses. The works, however, of which they are now in possession, are capable of producing 30 per cent. more gas than is now consumed, and when they are fully developed a saving of 4d. to 5d. per 1000 feet may be expected on the standing charges. As to their being able to supply gas of the quality on which the Dundee public insist at 3s. or 3s. 6d., the prospect is very remote. The old company will have to refund to the commissioners the difference between the sum of £7325 12s., paid by them provisionally as a year's annuity, and £6125, the annuity awarded; and the new company will similarly have to refund the difference between

£2983 8s. 6d., provisionally paid, and £2537 10s., the annuity awarded.

Upon the whole, the results of this arbitration are not encouraging to municipal bodies desirous (like that of Sheffield) of absorbing gas companies at any cost; and few, we apprehend, will be tempted to imitate the Corporation of Dundee in expending £30,000 in costs, if by pressure on the companies they may obtain a good supply of gas at moderate rates. The valuers on both sides will doubtless profit, in any future valuations they may be called upon to make, by the indirect rebuke administered by the award against exaggerated or even strained valuations, for no one will question the ability and integrity of so experienced an umpire as Mr. Pownall.

We understand that the appeal of the Great Central Company, on the report of sulphuretted hydrogen in their gas, has been decided by the chief examiner in favour of the company, as occasioned by unavoidable cause or accident.

That of the Chartered Company, on report of deficiency of illuminating power, has been decided against the company. The proceedings before a magistrate to recover the forfeits incurred are to be heard by the Lord Mayor next Friday. There are two cases, we understand, against the Chartered Company—one for alleged excess of ammonia, reported at the Gray's Inn Lane testing-place, before the referees allowed the increased amount, against which the company did not appeal, and in respect to which the report of the examiner is accepted as final and conclusive; and the deficiency of illuminating power reported at the Leadenhall Street station, against which the company did appeal. The proceedings before the Lord Mayor will be looked forward to with interest.

The City of London and Chartered Gas Companies have accepted the scheme of amalgamation approved by the Board of Trade, subject to some modifications which they hope to induce the Board to make.

Complaints of nuisance from the gas-works having been made to the Corporation of Newcastle, proceedings were taken against the company, which were afterwards suspended, pending the inspection of the works by the chairman of the Gas Committee, the inspector of nuisances, and Dr. Letheby. The alleged cause of the nuisance was spent lime, which it seems is removed from the purifiers into bags, and carted away at once. In this way it cannot fail to be a nuisance for a moment. It would be a less cause of offence if left in the yard for a time covered with old lime. Another alleged cause of nuisance was the manufacture of sulphate of ammonia, of which we can only say that that ought not to be a source of annoyance, since the escape of sulphuretted hydrogen is easily prevented. Some misapprehensions on the subject of purification seemed to prevail at the meeting of the Town Council, reported in another column. Mr. Perkins may be surprised to learn that some London companies have returned to the system of purification by lime, and all would if they could. The sheriff may also be informed that the amount of sulphur in the gas of some London companies is often as small as that in the gas of the Newcastle Company, owing to the quantity of lime employed.

Another accident to a gasholder is reported from Limerick, making the fourth recorded during the past month. With regard to the accident at Cambridge, some particulars have reached us from which we learn that, both tank and gasholder being full, the latter, in rolling about in the heavy gale, caught on the kerbstone of the tank, and went over on the opposite side, breaking six of the fourteen guide-columns short off near their bases, without their falling over, the girders retaining them in their places.

A Mr. Partridge, solicitor to that mythical body, the King's Lynn Gas Consumers Company, called a meeting at that town the other day, at which the mayor obligingly took the chair. The object, of course, was to get the present gas supply abused, and the town committed to the support of the nebulous company. Much abuse was heaped on the present supply; too much, indeed, to be received at a distance, and without proof, as well founded. But the object of the filibusters can hardly be said to have been completely achieved, since the resolutions proposed—considerably modified by the common sense of the meeting—though carried unanimously, do not appear to have been warmly supported. In the course of the proceedings, a Mr. Durrant (whose name we presume it is that appears in the Bill among the subscribers to the undertaking) in vain endeavoured to elicit from Mr. Partridge who were the promoters of the company. There were no promoters, Mr. Partridge stated, and the silence of Mr. G. W. Stevenson, C.E., who was present at the meeting, gave consent to the statement. This unnecessary reticence, to use the mildest term, cannot be too strongly condemned. If the object of the company be the benefit of the town of King's Lynn, there can be no reason why the whole truth about it should not be told. As it was, Mr. Stevenson succeeded in showing ample reason why the Corporation of the town ought to oppose the Bill of the company, which some at the meeting were not slow to appreciate. The game of the filibusters has, however, been seriously interfered with, since the proprietor of the existing works, who is supplying good gas at 3s. 9d. per 1000 feet, is now before Parliament with a Bill which will give the public all the protection they require.

Miscellaneous News.

METROPOLITAN BOARD OF WORKS.

The Weekly Meeting of the Members of this Board was held on Thursday, Dec. 23, 1869, at the Offices, Spring Gardens—Sir JOHN THWAITES in the chair.

The CLERK laid before the board the weekly report of the accountant, which showed that the cash balance at the bankers amounted in the aggregate to £1,178,706 8s. 5d. On the recommendation of the Finance Committee, the board agreed to draw cheques for the payment of various accounts amounting altogether to £27,143 10s. 11d.

THE SEWAGE UTILIZATION QUESTION.

A deputation from the board of the Native Guano Company, Limited, attended the board to present a memorial with reference to their "A. B. C." sewage process, the company wishing to enter into a treaty with the board for the promise of the concession of the sewage on the south side of the Thames, on satisfying them that they are in a position to accomplish the purification of the sewage, and to comply with the necessary requirements. It was stated that similar operations had been for some time carried on at Leamington, and with considerable success.

Mr. RAWSON, the general manager of the company, addressed the board in support of the memorial, and the subject was referred to the Works and Improvements Committee for consideration.

THE GAS SUPPLY TO THE CITY OF LONDON.

A report was presented from the Works and General Purposes Committee, stating the course which the committee had taken with regard to the scheme for the amalgamation of the City of London Gas Company with the Gaslight and Coke Company. The report was as follows:—

The board, on the 12th of November last, instructed the Parliamentary Committee to endeavour to obtain the insertion in the scheme before the Board of Trade for the amalgamation of the City of London Gas Company with the Gaslight and Coke Company of clauses providing that the works should be removed from the metropolis within a stated time, and that the money derived from the sale of the works, or from any compensation which the companies might receive, should be applied in reduction of capital. Subsequently, on the 19th of November, a letter from the Board of Trade on the subject was referred to your committee. In that letter, a doubt having been expressed by the Board of Trade as to how far they could adopt the suggestions of the board, your committee requested the chairman and two or three other members to see the Secretary of the Board of Trade on the subject. This they did, and your committee have now to report that such alterations have been made in the scheme as in substance to meet the views of the board.

The report was received and adopted.

STOREAGE OF PETROLEUM.

A further report from the Works and General Purposes Committee, on the subject of complaints made as to the large quantities of petroleum stored in the neighbourhood of West Ham. The report stated: "Your committee have considered the letters from the Lee Conservancy Board and the West Ham Local Board of Health, calling attention to the storeage of large quantities of petroleum, &c., at the premises of Messrs. Roberts and Johnson, Rowatt's Wharf, Bow, and the letter from Messrs. Roberts and Johnson, enclosing a return of their stock, and stating that they had no petroleum on their premises within the meaning of the Act referred to by the board on the 15th of October last. The superintending architect has inspected the premises, and reported that Messrs. Roberts and Johnson had done everything they had been required to do. A sub-committee have also inspected the premises and have made some further suggestions, which the architects will convey to Messrs. Roberts and Johnson, and they will doubtless carry out the improvements. Your committee have further to report that, in accordance with the resolution of the board of the 26th ult., they have considered the superintending architect's report on the subject of proceedings taken against Mr. Cockle, an oilman at Deptford, for storing petroleum which gave off an inflammable vapour at a temperature of less than 100°, the limit fixed by the Petroleum Act of 1868. It appears that the board have granted Mr. Cockle a licence to keep 10 gallons of petroleum of the statutory strength; but Mr. Townsend, the inspector of weights and measures of Greenwich, found on the premises 18 gallons of the oil, which gave off an inflammable vapour at 88°. Mr. Townsend thereupon took out a summons against Mr. Cockle for infringing the Act and the conditions of his licence. The architect in his report expresses the opinion that the proceedings against Mr. Cockle should be taken by the board; but, looking to the terms of the 6th section of the Act of 1868, it appears clear that the duty of proceeding against parties infringing the provisions of the Act is imposed on the inspectors of weights and measures."

The report was approved.

THE DUNDEE GAS AWARDS.

MEETING OF THE GAS COMMISSIONERS.

A Special Meeting of this Commission was held on the 24th ult.—Provost YEAMAN presiding—for the purpose of announcing Mr. Pownall's awards in the arbitrations, which had been received by telegram.

The PROVOST: This meeting has been called to hear the award of annuities and expenses to the Gas Commissioners by the overman in the arbitration, Mr. Pownall. That award has been received by telegram, and I now ask Mr. Thornton to read it.

Mr. THORNTON read the following telegram from Mr. Robertson:—Old Company: Total annuities, £6125, whereof £2875 is to the old stock, and £3250 to the new. The old company have got of costs £6401 2s 5d. The total annuities to the new company are £2537 10s. Of that, £1900 is to their old stock, and £637 10s. to their new. Then they have got of costs £3018.

The PROVOST: I am sure you will quite approve of our having called this meeting, so that the public without any loss of time may hear the result of this very important negotiation, which has been pending over us for nearly three years now, and which has caused the people of Dundee so much anxiety. Mr. Thornton has read to you figures showing the result as it really is, but I have in my hand figures showing what would have been the result had we consented to abide by any private arrangement with the companies, instead of going as we did to arbitration. And now that the whole thing has been settled, I think there will be no breach of trust if I state what we could have done by private arrangement, and make a comparison between what would have been the result of such an arrangement and the result of the arbitration which is before us now. The old company, as Mr. Thornton has read, have got in annuities £6125, which is equal to a capital price of £153,125. The amount stated by the company as their ultimatum, in private communings, was £10,400, which was equal to a capital of £260,000; so that the result of the arbitration in this respect shows a saving to the community of £4275 in annuities, or a capital sum of £106,875. The costs claimed by the old company were £10,593 7s. 0½d., with an account added of £76, making the total

claim for costs £10,669 7s. 0½d. The costs allowed them are £6401 2s. 5d., leaving the company to pay £4268 4s. 7½d. The expenses allowed, I may mention, are equal to an annuity of £256. The case of the new company stands thus: The amount of annuities allowed is £2537 10s., which is equal to a capital price of £63,437 10s. The amount of annuities claimed by the company in private as the lowest sum they would have been willing to accept was £4250, being equal to a capital of £106,250. The public have thus saved by the arbitration, in the new company's case, £42,812 10s. The amount of costs claimed by the new company was £5637 7s. 11d., with an account added for £24 12s. 6d.—altogether £5662 0s. 5d. They have been allowed £3018, leaving a balance which they will themselves have to pay of £2644 0s. 5d. The expenses allowed are equal to an annuity of £120 14s. 4d. Now, Mr. Pownall, for the purposes of the gas companies, and also for the purposes of the Gas Commission, has given his award in two ways. He has in the first place named in the case of each company a lump sum, and then he has, in the case of the old as well as the new company, divided that sum between their old and new stocks. The companies will have it in their power either to divide the lump sums among themselves, or to agree to Mr. Pownall's division of them; but that is a matter with which the Gas Commissioners have nothing to do. This is the final award, so far as we are concerned, and there is no possible door left open for any litigation with us. If there be any dispute it will be amongst themselves, not with us. Mr. Pownall, I may mention, has given the old company, on their old stock, £2 5s. per share, and on their new stock 6¼ per cent. To the new company he has given, on their old stock, 4¾ per cent., and on their new stock 4¼ per cent. The total annual sum, then, which the public will hereafter have to pay the gas companies is—to the old company £6125, and to the new company £2537 10s.—amounting altogether to perpetual annuities of £8662 10s. To this sum we must add the expenses in the case of both companies, and these, supposing they be capitalized, will be equal to an annuity of £376 15s. 3d., working out at 4 per cent.; so that to both companies we shall have to pay, in future, annuities of £9039 5s. 3d., which sum includes both companies expenses. The saving, therefore, which we have made by not agreeing to the lowest sums asked by the companies under private arrangement is equal to a capital of £149,687 10s. These facts we have not hitherto been at liberty to divulge; but now that everything is out, I think we are fairly entitled, without any breach of faith, to let the public know what took place. When the companies went before the arbiters they claimed, between them, £21,000 annuities, and they have now been awarded £8662, leaving a balance in our favour of £12,938, which, capitalized at 4 per cent., is a saving to the public of £313,450. Of course, before the arbiters they contended for very large sums, and perhaps we also went a little wrong on the other side. But I am sure, now that the arbitration is over, that the final result of the great contest must be very satisfactory. There is no doubt but that remarks were made far and wide, throughout the length and breadth of the land, that this arbitration was to be such an expensive matter that no public board would again enter into it, but would rather submit to give larger sums by private arrangement than run the risk of incurring so vast an amount of expense. But we find here that notwithstanding all that has been said throughout the country, and especially in Dundee, with regard to the expenses, that when capitalized they amount to the very small sum of £376 a year. And what has been saved by means of these expenses? No less a sum than £149,687 10s. That, I think, must be very satisfactory to the public; and for my part I have no doubt but that the public will be quite satisfied we have got justice at the hands of the arbiters, and especially at the hands of the oversman, Mr. Pownall. Nor do I think that the companies have any cause for complaint. I do not think, notwithstanding that they contended for so large annuities, that any reasonable shareholder will complain; and my opinion is that the public will now justify the Gas Commissioners for what they have done from the commencement of the contest. It was always contended against us that although we went to the arbiters to fix the price, they would give the companies a just award; and it was contended against the Town Council that they made a special blunder when they agreed to pay the expense of both sides. Now, it should be borne in mind that the agreement was a very difficult matter; and I question if it would have been entered into at all unless the Town Council had undertaken to pay the expenses of both sides. I think, however, that the result now justifies the Town Council, and that, notwithstanding all that has been said, they were quite right in entering into the agreement to take the expenses of both sides upon them. Indeed, had they not so undertaken we should not have got the bill, and the public of Dundee would not now have had gas at the reasonable price they are paying. I have, I think, clearly shown—and gentlemen around the table can corroborate me—that, had we consented to a private arrangement, the cost of the gas-works to the public would have been something like £150,000 more than it is by the result of the arbitration. If I have made any wrong statement I shall be glad to be corrected. I have myself no doubt, looking at this result—looking to the state of the works, and the admirable arrangements we have now made for supplying gas—that in a very short time, instead of paying 5s. 4d. per 1000 feet, we shall be paying 3s. 6d. or 3s. 8d. I think, therefore, we are quite entitled to speak out clearly what we assume the result to be. Of course, great expenses have been incurred in carrying through the transfer; but, as I said, I have no doubt that in a couple of years, or less, gas, very superior in quality to what has been hitherto given them, will be supplied to the people of Dundee for 3s. 6d. or 3s. 8d. per 1000 feet.

Bailie Buchan: The result of the arbitration is very gratifying to me, and must be to the other gentlemen present who took a very active interest both in carrying through the agreement, in endeavouring to obtain the bill, and also in pushing through the arbitration. I believe there are only three gentlemen present who signed the agreement with the gas companies directors to take over the gas-works. Before we signed that agreement the matter was taken up by the community, and, after being fully discussed, there was not a single dissentient voice against the Town Council entering into the agreement. Very shortly, however, after we had entered into the agreement there was an opposition, because it was thought we should have to pay a much larger sum than we could have bought the gas-works at if the price had been named at the time the agreement was entered into. It was maintained by the gentleman who carried through the transaction that, if the agreement had not been entered into on the terms agreed on, the gas-works would never have been—up to this time, I believe—transferred to the community. The terms were, if we could not agree about the price, it was to be settled by arbitration. We always had great confidence that we should get ample justice from the arbiters, chosen both by the gas directors as well as by the commission, and the result has justified that view. Before we entered Parliament with the bill, various meetings took place between deputations from the Chamber of Commerce and the Town Council, with a view of having the price fixed at that time. These negotiations did not result in the price being fixed. We went to Parliament, and the bill was carried through at a very great expense, in consequence of the opposition that was encountered by the promoters of the bill. Had parties been as anxious at that time to fix the price as they were to throw over the agreement, I have no doubt we could almost have had as satisfactory a result then as we have to-day, and a great deal of expense would thereby have been saved to all parties concerned. After the bill was carried through Parliament also we endeavoured to negotiate terms to have the price fixed before we would incur the great expense we saw was to be incurred by going to an expensive arbitration. These negotiations were opened by a committee of the gas directors and a committee of the Gas Commission. I happened to be one of the parties, and we mentioned specially to the old company's directors that we thought, in order to bring about a settlement, the Gas Commissioners ought to state their maximum price, and the gas directors their minimum—that is, the lowest price they were willing to take rather than go to arbitration. The lowest sum stated was £10,400, and we offered £5000, and I think the result has shown that the Gas Commissioners were nearer the figure than the directors; but as we had come to negotiate, I had no doubt we should have been prepared to give a much larger sum. The new gas company's directors, in the same way, stated their minimum price at £4230, and we gave our maximum figure at £2000. Although there was a difference of opinion in regard to taking over the gas-works, and in regard to passing the bill in Parliament, there never was any difference of opinion that we should never consent to give the large sums asked by the gas directors, and that an arbitration was inevitable if they were not prepared to accept a much less sum. Before this took place, however, I believe the directors had engaged and consulted gas engineers, who gave them a very extravagant idea of the value of their works, so that it was perfectly evident we never could come to an agreement without paying a very large sum indeed. Now I am sure we, who have taken a deep interest in the concern from the very first, are glad at this result, and it is a matter of satisfaction to the whole of us that there has never been any difference of opinion in regard to the arbitration. We have been unanimous in every step we have taken in regard to this arbitration. I hope the result will be satisfactory to the community, and I really think the gas companies have got a full and fair price for their gas-works. Now, before the bill was introduced into Parliament, in order to avoid contention and expense, the council were prepared to offer £7000 of annuities. Not only so, but I believe we would have given £500 more; and a sum of £3000 was the sum likely to be given to the new company if they would come to terms before going to Parliament. If that had been agreed on, a bill would have been carried through Parliament at a very small expense; but, notwithstanding that, the annuities would still have been something like £10,500. The annuities now are stated at something like £9038, and to that there are the expenses of the bill to add. These expenses are, I suppose, something like £7000. If that agreement had been made, there is no doubt that, instead of £7000, the bill might have been carried through for £3500—that is £3500 the bill cost by being contested in Parliament. Then there are the expenses the Gas Commission have to pay in the arbitration. I do not know what these expenses are, but I observe the two companies have lodged a claim of £16,100 for expenses. I do not anticipate the Gas Commission will be anything like that sum; in fact, I believe they will be under £12,000. If we add the annuities with the whole expenses—both the expenses of the Gas Commissioners and the expenses we are bound to pay for the gas companies—I believe the sum annually to be paid will be under £10,000; whereas, if the previous agreement had been entered into, we should have paid £10,500 to the companies. I am speaking advisedly when I say so, because we had several consultations about it; so that, taking the whole result, we are cheaper than if we had given in to the gas companies.

Mr. Thornton: I have just received a repetition of the telegram, so that it is perfectly correct.

Mr. Smith: I have always taken a very deep interest in this matter. Bailie Buchan has made some reference to the Chamber of Commerce, but I am not going into that. I have stated my views there over and over again, and I do not think it is likely Baillie Buchan and I should agree though we were to bring it up here. But I think we have great reason to be well pleased as Gas Commissioners with the award as settled, and I think we shall be justified before the public in all the proceedings we have taken since we have been appointed a Gas Commission. In one word, I should like to look at the position of matters. We had estimates of the value of the old company from, I think, five or six different experts. Their value—or, rather, the average value—was £103,000. The award is £3125, which, at 4 per cent., or 25 years purchase, is £153,125. Now, suppose that £3125 is necessary to meet the extra judicial expenses, they will have £150,000 as the value of the works, which our experts valued at £100,000, so that I think they ought to be well satisfied with the award. That is our justification in going to arbitration. The old company stated as their lowest price £10,400, which, at 4 per cent., gives £256,000, and the sum they claimed in London at the arbitration was £14,000—equal to £350,000. In short, I may say the value of the works was taken at £100,000, and the award—the sum they will get—is £150,000. The lowest sum they said they would take was £260,000, and the sum they claimed was £350,000, so that we are justified in the proceedings we have taken.

Mr. Stewart: I very much sympathize with the remarks made by Bailie Buchan. I think that during the whole contest the local authority never received the support to which it was entitled. When we first entered upon the agreement it was the cause of great anxiety to every individual who took an interest in it. It was charged against the corporation that the agreement was loosely got up, and that in agreeing to this, that, and the other thing, we had shown ourselves possessed of no sense at all. But we all know what it is to make a bargain, and that there are certain things which we must either take with the articles named or drop the bargain altogether. We were so thoroughly satisfied that it would be for the benefit of the community to take over the gas companies works that we determined nothing should stand in the way of that being done; we determined also to carry through our negotiations in the easiest and best manner possible, and so one of the articles in the agreement was that the works should be taken by arbitration, if they could not be taken otherwise, and that we should pay the whole expenses of that arbitration. I am quite satisfied now, from what I have seen and from what has been the result, that the resolution we came to and acted on was a wise one. With respect to the expenses, I am not going back on the cause of a great deal of unnecessary expense to the corporation. The gas companies broke faith with us, and that added a great deal to the expense. I do not want to say anything about the Chamber of Commerce, but I think that, instead of helping us, they added greatly to the expenses incurred in London. I am not blaming them now. They got satisfaction in seeing what they could do, and they thought very lightly of the corporation, which was doing its best for the town. But we ought to have no reflections on what is past, and should now congratulate one another on the award which has been given.

Mr. Cunningham: I have made a valuation as to the bearing of the annuities and expenses on the quantity of gas consumed. Our consumption is 220 millions of feet, and, spreading the annuities and whole charges over that consumption, gives 11d. per 1000 feet. Taking the amount at £9000, it would be 10d.; but Bailie Buchan has referred to £10,000, and on that sum the result is as I have stated.

In reply to a question,

The Clerk said the expense of the production of gas might amount to 2s. or 3s. per 1000 feet, according to circumstances.

The Provost: There is no question that doubts did prevail before the bill passed, and every section of the community is quite entitled to differ from the others, and I quite believe they did it honestly; but I can tell you, so far as my experience goes, since this new board has been constituted a mixed board, consisting partly of large consumers of gas and partly of the corporation members, consisting of 21 gentlemen, I have never seen any public board work so well, so harmoniously, and so unanimously as they have done. I was quite surprised to see that at the last private meeting we had with the directors of the new gas company, we were so unanimous and so firmly agreed in our opinion, there was not a dissentient voice in regard to what we proposed. I must congratulate this board on the able manner in which they have supported the whole transactions which were carried through at that time by the Town

Council. Bailie Buchan suggests that we should give a vote of thanks to a gentleman connected with us in London, but I do not know if it would be business like.

Mr. M'FARLANE: I think we should reserve that.

Mr. ROBERTSON asked if he could obtain copies of the evidence that was led in London, to which Mr. THORNTON replied that he had six copies, which he had intended to give to members of the special committee on the arbitration, and that he had other four copies, which he would endeavour to distribute as satisfactorily as he could among the practical men of the board.

The meeting then separated.—*Dundee Advertiser.*

COMMENTS OF THE LOCAL PRESS.

The inhabitants of Dundee of all classes may heartily rejoice that the awards of Mr. Pownall, the oversman in the gas arbitrations, are, on the face of them, impregnably just and equitable—as we have always had confidence they would be—while they thoroughly justify the Gas Commissioners, as the public representatives, in refusing to agree to the exorbitant claims put forward on behalf of the gas companies. They are awards to which the shareholders—whom no one ever wished to injure—cannot take reasonable objection, for they secure to them, on the best of all public securities, a fair return on their investments. They, on the other hand, deserve to be hailed with extreme satisfaction by the consumers of gas in Dundee—in other words, the whole population—since by transferring the gas-works to the town at a close approximation to their actual value, they will enable *their* directors—the Gas Commissioners—ultimately to supply gas at much lower rates than have been hitherto charged.

It is not our habit to exult in the hour of victory over our opponents, nor to upbraid those who suffer from not following our advice; and we shall be studiously moderate in our remarks on the latest, if not the most striking instance of the correctness of the views we have advocated, against much opposition and misrepresentation. The public movement in favour of the purchase of the gas-works by the town was initiated by ourselves at the public meeting held on the 7th of October, 1867, and from that moment we were marked out for persistent personal abuse and systematic misrepresentation. Upon all that we can now afford to smile. We first of all gave all our influence to carrying the bill for the transfer to the town; then to obtain an amicable arrangement with the gas companies; and that failing, to support the Gas Commissioners in protecting the consumers from the enormous claims put forward by the companies, urging them to pay no heed to the devices resorted to for coercing them into giving the companies unreasonable sums. In advocating the transfer under the agreement bill, the argument continually put forward by the opponents of the measure was that the town would be taking a leap in the dark, and that, because the price was not fixed, the bargain was sure to prove a very bad one. Predictions can only be answered by predictions; and we could only reply to the continual expression of want of faith in the price being fairly fixed by arbitration, by continual reiteration of our perfect confidence in the result. Well, we may now ask those members of the Chamber of Commerce, and others who objected to arbitration, whether that result has not fully justified the confidence we from the first reposed in it.

No doubt it would have been much better if all the cost and trouble of the arbitration proceedings had been avoided. The shareholders of the gas companies will now find that out. So long as there was any hope of bringing the parties together we urged them to come to terms, but it was too obvious from the first that the ideas of the leading directors (of the old gas company more particularly) were so inflated that there was no possibility of arranging with them. They seemed to wish their bread not only buttered on both sides, but in the middle and all round the edges as well. They knew well that, to save the cost and worry of arbitration, the town would have given them £7000 in annuities and their expenses, being nearly £1000 a year, or upwards of £20,000 more of a capital sum, than they have now obtained. Never, perhaps, was there an instance in which inordinate greed has been more deservedly punished by seeing its designs frustrated.

When the monstrous demands of the companies placed amicable arrangements out of the question, attempts were then persistently made to excite the public feeling against the commissioners on account of the expense of the arbitrations. It was carefully kept out of view that the companies were to blame for that expense, and while the expense itself was absurdly exaggerated, no allowance was made for the fact that every pound of annuities saved had to be multiplied by 25 years purchase to ascertain the full saving to the community. Fortunately the Gas Commissioners never paid the slightest heed to the paper pellets directed against them, but, knowing that their case before the arbiters was in able hands, went steadily on with the arbitrations, approving of all that their agents and counsel did on their behalf. The result has most thoroughly justified their firmness, and, like that in the case of the Harbour Trustees and the contractors, shown the wisdom of public boards standing steadily by their officials when they know that those officials are acting ably and zealously for them.

The annoying fact to the directors of the two gas companies is, that they might both have made much better terms by friendly agreement than they have done after all the delay and cost of the arbitrations. The representatives of the town were willing, as in the case of the water company, to have given something in the way of bonus, in addition to the precise value which Mr. Pownall has now awarded them. By way of showing as clearly and concisely as possible the differences between the sums claimed and the sums awarded, we may tabulate them as follows:—

	Old Company.	New Company.
ANNUITIES formally claimed	£14,000	£7,000
Ditto privately claimed	10,400	4,250
Ditto would have been conceded	7,000	3,000
Ditto now awarded	6,125	2,537
CAPITAL SUM, at 25 years purchase, formally claimed	£350,000	£175,000
Ditto privately claimed	256,000	106,250
Ditto would have been conceded	175,000	75,000
Ditto now awarded	153,125	63,437
COSTS claimed	£10,669	£5,637
Ditto now awarded	6,401	3,018

As the provost yesterday clearly summed up the difference—"When the companies went before the arbiters they claimed between them £21,000 annuities, and they have now been awarded £8662, leaving a balance in our favour of £12,938, which, capitalized at 4 per cent., is a saving to the public of £313,450." Bailie Buchan also demonstrated that, converting the total expenses of the bill and the arbitrations, so far as borne by the community, into annuities, the town will pay less for the gas-works under the present award than its representatives were willing to have given under friendly agreement—a warning, verily, to those who will ask more from the public than they are fairly entitled to claim.

On the other hand, as we have already said, the shareholders of the gas companies have every reason to be content with the sums awarded them. We suspect that none of the general body of the shareholders ever dreamt of their property being of the value it was represented to be by their directors. Let us see what the dividends of the companies hitherto have actually been. Take first the following

Statement of the Dividends on each Share of the Old Company in each Year from 1826 to 1868.

	Years ending May 31,	Dividends. Rate per Share.	Rate per Cent.	Amount.
1	1826			
2	1827			
3	1828	£2 0 0	£10 0 0	£2,000 0 0
4	1829	1 12 0	8 0 0	1,600 0 0
5	1830	1 12 0	6 14 9	2,000 0 0
6	1831	2 0 0	8 8 5	2,500 0 0
7	1832	2 4 0	9 5 3	2,750 0 0
8	1833	2 5 0	9 9 6	2,812 10 0
9	1834	2 6 0	9 13 8	2,875 0 0
10	1835	2 8 0	10 2 1	3,000 0 0
11	1836	2 10 0	10 10 6	3,125 0 0
12	1837	2 0 0	8 8 5	2,500 0 0
13	1838	2 0 0	8 8 5	2,500 0 0
14	1839	2 10 0	10 10 6	3,125 0 0
15	1840	3 0 0	12 12 7	3,750 0 0
16	1841	3 0 0	12 12 7	3,750 0 0
17	1842	3 0 0	12 12 7	3,750 0 0
18	1843	3 0 0	12 12 7	3,750 0 0
19	1844	2 10 0	10 10 6	3,125 0 0
20	1845	2 0 0	8 8 5	2,500 0 0
21	1846	2 0 0	8 8 5	2,500 0 0
22	1847	1 0 0	4 4 2½	1,250 0 0
23	1848	1 0 0	4 4 2½	1,250 0 0
24	1849	1 0 0	4 4 2½	1,250 0 0
25	1850	1 10 0	6 6 4	1,875 0 0
26	1851	2 0 0	8 8 5	2,500 0 0
27	1852	2 0 0	8 8 5	2,500 0 0
28	1853	2 0 0	8 8 5	2,500 0 0
29	1854	2 0 0	8 8 5	2,500 0 0
30	1855	2 0 0	8 8 5	2,500 0 0
31	1856	3 0 0	12 12 7	3,750 0 0
32	1857	3 0 0	12 12 7	3,750 0 0
33	1858	2 10 0	10 10 6	3,125 0 0
34	1859	2 10 0	10 10 6	3,125 0 0
35	1860	3 0 0	12 12 7	3,750 0 0
36	1861	3 0 0	12 12 7	3,750 0 0
37	1862	2 0 0	8 8 5	2,500 0 0
38	1863	2 10 0	10 10 6	3,125 0 0
39	1864	3 0 0	12 12 7	3,750 0 0
40	1865	3 0 0	12 12 7	3,750 0 0
41	1866	2 10 0	10 10 6	3,125 0 0
42	1867	3 0 0	12 12 7	3,750 0 0
43	1868	Old stock, 5 5 0	22 2 1 / New stock, 7 0 0	7,325 12 0
				£120,613 2 0

Note.—Besides the dividend of £6562 10s. on the original stock, the company paid to the original shareholders, in September, 1868, a sum of £7500, the means for which were furnished from the new capital raised under their money bill.

In explanation, it may be added that the company began in 1826 with a capital of £14,664, which was increased in 1830 to £29,687, and no addition was made to that capital till 1868, when, with a view to this transfer to the town, £50,000 new stock was issued, of which only a few thousands were needed for new outlay. The total capital, therefore, till 1868 was under £30,000, and up to that time the amount of the highest dividend was £3750. The new stock at 7 per cent. was simply issued to clear off some mortgage debts at 4 or 4½ per cent., and pay for a new gasholder; and, a much larger sum of stock being issued than was required, a sum of £7500 was paid in the name of "deferred profits" to the original shareholders. To a great extent the new stock was taken up by the latter; so that, practically, the same people who, until 1868, never got more than £3750 a year, will now get, under Mr. Pownall's award, £6125. It is well known—it came out most clearly during the arbitration—that everything was done that could be done by the directors in 1868 to make the profits appear as large as possible, and the shareholders do not need to be informed that guaranteed perpetual annuities of £6125 are far more valuable than an inflated dividend of £7000, subject to all manner of contingencies.

Take next the case of the new company, referring to the following

Statement showing the Capital paid up, and the Annual Dividends paid thereon, from 1847 to 1868.

Years ending	Capital. Number of Shares.	Amount paid up per Share.	Total.	Dividends. Rate per Cent.	Amount.
May 17, 1847	6865	£4 0 0	£27,460 0 0	2½	£687 2 4
May 9, 1848	..	5 0 0	..	..	..
May 7, 1849	..	5 0 0	..	..	..
April 30, 1850	6740	5 0 0	33,700 0 0	2½	842 10 0
April 30, 1851	6945	5 0 0	34,725 0 0	4	1,389 0 0
April 30, 1852, first issue.	6945	5 0 0	34,725 0 0	3	1,041 15 0
April 30, 1852, new issue.	1055	2 10 0	2,637 10 0		28 10 2
April 30, 1853, first issue.	6945	5 0 0	34,725 0 0	3	1,041 15 0
April 30, 1853, new issue.	1055	5 0 0	5,275 0 0		128 13 3
April 30, 1854, both iss.	8000	5 0 0	40,000 0 0	3	1,200 0 0
April 30, 1855	8000	5 0 0	40,000 0 0	2½	1,000 0 0
April 30, 1856	8000	5 0 0	40,000 0 0	4	1,600 0 0
April 30, 1857	8000	5 0 0	40,000 0 0	5	2,000 0 0
April 30, 1858	8000	5 0 0	40,000 0 0	4½	1,800 0 0
April 30, 1859	8000	5 0 0	40,000 0 0	4½	1,800 0 0
April 30, 1860	8000	5 0 0	40,000 0 0	5	2,000 0 0
April 30, 1861	8000	5 0 0	40,000 0 0	4½	1,800 0 0
April 30, 1862	8000	5 0 0	40,000 0 0	3	1,200 0 0
April 30, 1863	8000	5 0 0	40,000 0 0	4	1,600 0 0
April 30, 1864	8000	5 0 0	40,000 0 0	5	2,000 0 0
April 30, 1865	8000	5 0 0	40,000 0 0	5	2,000 0 0
April 30, 1866	8000	5 0 0	40,000 0 0	4½	1,800 0 0
April 30, 1867	8000	5 0 0	40,000 0 0	5	2,000 8 0
April 30, 1868, original	..	..	40,000 0 0	7	2,800 0 0
New ordinary stock, 1867	..	..	15,000 0 0		183 8 6
					£31,943 2 3

Here, again, it will be observed that never until 1868 did the shareholders divide amongst them more than 5 per cent., or £2000. Then, all of a sudden, in view of this transfer, the dividend jumped up to 7 per cent., or close upon £3000. It is absurd to think that that would have continued. The new company was in a most precarious position—quite at the mercy of the old company, which might have broken the private working agreement at any moment, as it was even threatening to do before going to Parliament for the amalgamation bill. How much better are fixed annuities, averaging above 4½ per cent., to dividends fluctuating between 2½ and 5 per cent., which might have ceased altogether had the old competition broken out again between the two companies.

From what we hear, the reasonable shareholders in the new company are very well satisfied with Mr. Pownall's decision. Those of the old, who had buoyed themselves up with their extravagant expectations, are, of course, now proportionately depressed in their spirits. The only serious demur on the part of the shareholders, however, is as to the manner in which the oversman has allocated the annuities. The holders of the new stocks think that Mr. Pownall should have given the annuities in lump sums, and left the shareholders themselves to allocate the proportions in which they are to be divided between the holders of the original and new stocks. We understand, however, that Mr.

Pownall, while fixing absolutely the total annuities awarded to each company, only suggests the per centages to be given to the new stocks. The allocations he proposes are as follows:—

	Amount.	Annuities.	Per Cent.
Old Company.			
Original shares	£29,687	£2575	9¾
New shares	50,000	3250	6½
	£79,687	£6125	
New Company.			
Original shares	£40,000	£1900	4¾
New shares	15,000	637	4¼
	£55,000	£2537	

Now, if the new shares had been entirely held by the holders of the old stocks, this division would have made no difference in the result; but all the new shares were not taken up by the old shareholders, and those who have new shares only say they will stand on their legal rights. In the case of the old company, the new shares were issued with the condition that they were to have 7 per cent. dividend guaranteed whenever the old shares reached 7 per cent. As Mr. Pownall has awarded the old shares more than 7 per cent., the new shareholders, therefore, are not likely to accept less. This contingency has been foreseen, and counsel's opinion taken upon it by representatives of both parties, so that it is just possible there may be a litigation as to the division of the spoil The fact is, the issue of the new stock by the old company was, like many other clever things, a little too clever. In the case of the new company, the new shareholders will, we understand, also insist on equal rights with the old shareholders, and then the equal dividend will be somewhat more than 4½ per cent. There is little doubt that, even at that rate, on such security the new company's shares will sell above par. There will, on the other hand, be a sudden fall in the absurdly inflated prices of the old company's old shares. If there are any persons who have been so foolish as to pay the fictitious sums at which they have nominally stood for some time past, they will have burnt their fingers, without any chance of the public commiserating their folly.

The gas consumers may now rest assured that every prediction we have made as to the reduction in price and the improvement in quality of the gas supplied by the Gas Commissioners, will in due time be fulfilled. These arbitration proceedings have prevented the commissioners coming to a decision on various proposals for the improvement of the supply with which they will now be able to deal. Some time must yet elapse before the full advantage of the works being in the hands of the public will be realized: but Provost Hay was not so wild as he seemed to many at the time when he said that the saving in the price of gas would pay half the police assessment. Our advocacy of the transfer of the gas and water supplies to the town is not a thing of yesterday, nor was it undertaken without consideration both of the financial, sanitary, and social advantages of these supplies being in the public hands. That the experience of the future will confirm our predictions in the past we have the most perfect confidence.—*Dundee Advertiser.*

We are glad to be able to announce that the awards in the gas arbitration cases have now been issued, and are as favourable to the community as could reasonably be expected. The sums, as announced by telegram yesterday, and intimated to a meeting of the Gas Commissioners in the afternoon, are as follow:—

Annuities to old company	£6125 0 0
„ to new company.	2537 10 0
Total annuities	£8662 10 0

The expenses claimed by the old company were £10,593, but were cut down by the auditor of the Court of Session to £3098. Mr. Pownall, however, deals more liberally with the company, making the amount payable to them as expenses £6401. The expenses claimed by the new company were not remitted to the auditor, but Mr. Pownall, acting on the same principle as in dealing with those of the old company, has reduced the amount from £5662 to £3018. The two combined give a sum of £9419, the interest on which, at 4 per cent., is equal to £376 annually. We cannot as yet tell precisely the amount of the expenses incurred by the commissioners, and which Provost Yeaman left entirely out of his calculations yesterday; but there is no doubt that these, including the expense of the Act, considerably exceed £20,000. The interest on this sum will add other £800 to the annual cost, making the gross annuities payable nearly £10,000.

When the meeting was held between the Gas Commissioners and the old company with the view of adjusting the price amicably, the latter asked £10,400 of annuities, while the commissioners offered only £5000. In the evidence led before the arbiters, Mr. Spice, the leading witness for the company, stated that the concern was worth £14,120 annually; and Mr. Barlow, on behalf of the commissioners, estimated the annual value at £4076. The leading witness for the commissioners, although far below the mark, is thus shown to have been considerably nearer the sum awarded than the witness for the company.

In regard to the award in the case of the new company, the estimate in the evidence led by them, although much too high, seems to have been more accurate than that for the commissioners. Mr. Spice estimated the works, &c., as worth £5569 annually, while Mr. Barlow held that £723 a year was their full value. The award, as we have stated, gives £2537 10s.

While we consider that, under the circumstances, the decision is a favourable one for the community, we do not agree with Provost Yeaman and Bailie Buchan, when they state that the works would have cost far more if purchased by agreement. Up to the time the gas companies obtained their last Act, they had never divided more than £6000 in any one year; and there is no doubt that had the Town Council, instead of entering into the agreement to buy at an after period, then endeavoured at once to complete a purchase, a much smaller sum than £10,000 a year, which is now the cost, would have been satisfactory to the gas companies. It was too late, however, to attempt this after an agreement was entered into to fix the price by arbitration, and make the community liable for the expense.

As the awards give considerably less sums to the companies, in the shape of annuities, than they have received for the past year from the commissioners, the difference, according to the agreement, will have to be adjusted at the next payment. The sum thus to be retained will leave at Whitsunday a large balance in the hands of the commissioners, and we see no reason to doubt that this will enable them to make a considerable reduction in the price of the gas.

We hope, now that the matter is settled, that no long time will elapse before a full and detailed statement of the expenses incurred by the commissioners will be submitted to the public. We have no doubt that a desperate attempt will be made to prevent this, but it is right that those who have to pay the money should know the precise sum expended, and the parties who receive it; and only those who have reason to be ashamed of the amount they have received need fear publicity.—*Dundee Courier.*

THE NEWCASTLE CORPORATION AND THE GAS COMPANY.

THE ALLEGED NUISANCE FROM THE GAS-WORKS.

A Special Meeting of the Council of this Borough was held on the 20th ult. There was a large attendance, and the Mayor (Mr. James Morrison) occupied the chair.

The Mayor handed in three documents relative to the gas question. The first was a letter from Mr. William Hardie, secretary to the gas company, informing the council that Dr. Letheby had inspected the gas-works, in company with the chairman of the Gas Committee of the corporation and the inspector of nuisances, on behalf of the corporation; the second was the instructions given to Dr. Letheby; and the third was Dr. Letheby's report. Mr. Hardie added that, in asking Dr. Letheby to inspect the works, the directors of the company felt that they applied to the highest authority in the kingdom; and they assured the council that they would, with all practicable speed, carry out the suggestions of Dr. Letheby, and spare no expense. Indeed, the gas company could have no object in sparing expense, unless for the benefit of the inhabitants at large, who, under the provisions of the Act of Parliament constituting the company, would participate in its profits by the reduction of the price of gas. The instructions to Dr. Letheby were that he was called upon in consequence of complaints of nuisance in the neighbourhood of the works. The nuisance, in the first instance, was ascribed to the spent lime, and afterwards to the ammonia-works. The directors desired Dr. Letheby to examine the works, and to prescribe such measures as he considered best calculated to remove all grounds of complaint, bearing in mind that the company are most anxious to prevent all possible nuisance without regard to expense. Dr. Letheby, in his report, said: "I ascertained that the manufacture of coal gas was conducted in a very proper and efficient manner, the distillation of the gas being effected at rather low temperatures, and the purification of it by good condensation, washing, and lime purification. The lime purification was conducted in a series of purifiers charged with hydrate of lime (dry lime), which is by far the most effective, and, if properly managed, the least offensive method. Generally, the lime when removed from the purifiers is stored in the yards of the gas-works, and, if covered with old lime which is well weathered, it is not a cause of offence. In the present case, however, the lime is not kept at the works at all, but is put at once from the purifiers into canvas bags, and carried away. This entirely removes any possible ground of complaint from the materials. Considering, however, that the company are under serious obligations to furnish gas with a very small per centage of sulphur, it is not advisable to change the present method of purification for the more modern but less effective process with hydrated oxide of iron. Besides which I am of opinion that the exposure of the oxide of iron at the works for the purpose of revivifying it, would be a more offensive process than that which is now in use." Dr. Letheby then detailed the manufacture of sulphate of ammonia; and, to guard against the possibility of escape of sulphuretted hydrogen, he recommended that a purifier, charged with hydrated oxide of iron, be placed in the course of the pipe after the scrubber, and that a stream of high-pressure steam be blown through the "coffey still" and saturating vessel for an hour after the ammoniacal liquor had been turned off from the still. He recommended that the process carried on in the second house be abandoned for the other. Proper precautions were taken to prevent annoyance from the tar-distilling works. "Having regard, therefore, to the whole of the processes conducted at the works, I am of opinion," said Dr. Letheby, in conclusion, "that with the alterations which I have suggested, the escape of sulphuretted hydrogen may be so prevented as not to be in any way a nuisance to the neighbourhood."

The Mayor said he had requested the town-clerk to suspend the proceedings against the company until the council had formed an opinion on these letters.

Mr. G. Forster proposed that, as it was a purely chemical question, the report be laid before Alderman Bell.

Alderman Bell declined. Dr. Letheby would not have recommended measures which he had not found effective. He (Alderman Bell) would be very happy to examine the effect of the suggestions.

Mr. Perkins said it struck him as singular that the Newcastle Company should persevere in the system of lime purification after it had been abandoned by the London companies.

Alderman Bell said lime was more efficacious, and the Newcastle Company was under more rigid conditions as to sulphur than the London gas companies.

Mr. Hodge would like to know whether they were to take this as a plea of guilty on the part of the company, with a desire for the future to amend their ways.

The Sheriff said the company had adopted the very plan which Dr. Letheby had proposed, though, perhaps, the man had been remiss. With regard to sulphur, not one of the London companies ever got down to 21 grains; they had from 26 to 30, and even 36. In Newcastle the gas was four times purer than the best London gas, it having last week been down to 6 grains. The company had made arrangements with the railway company to carry away the lime as soon as it was used. He himself entered the gas company as a grumbler, believing something was wrong, but, having had the means of satisfying himself, he saw they had done all they could.

Mr. Cowen said all sensible men would approve of the mayor's decision. The gas company must remove the nuisance or be removed.

Mr. Plummer, from past experience as a director of the gas company, had not wished to say anything, but must correct a statement made by Mr. Cowen, that Dr. Letheby had said that if certain things were done the nuisance would be removed. He (Mr. Plummer) contradicted that *in toto*. What Dr. Letheby said was that, as the manufacture was carried on, the nuisance complained of could not be at the gas-works.

Mr. Hamond said, as chairman of the Gas Committee, he received an invitation to attend the inspection. Mr. Curry, the inspector of nuisances, also attended; and every possible question was put, and he (Mr. Hamond) himself frequently asked Dr. Letheby, "Can the nuisance complained of by the gentlemen at Rye Hill be attributable to the purification by lime?" and the answer emphatically was, "Not by any means."

The subject then dropped.

PROPOSED PURCHASE OF THE BRADFORD GAS-WORKS BY THE CORPORATION.

At the last Meeting of the Bradford Town Council, Alderman Scott, in accordance with a notice which he had given, moved—"That a committee be appointed to inquire and report as to the desirability and probable advantages of placing the gas supply of the town within the borough in the hands of the Town Council, and as to the best means to be adopted to carry out that object." He said he apprehended he should have general concurrence of opinion in the broad principle of which that resolution was the expression. He thought it would be generally admitted that it was desirable that works such as those for the supply of gas or the supply of water to a large community were better in the hands of the representatives of that community, and that it was only just that the profits derived from the monopoly conferred upon any body for the supply of an article of prime necessity, such as gas or water, should belong to the community, and not to a private company. There was, he believed, a very general feeling in the abstract that such a principle was right, and he apprehended that there would be no difficulty in its application to Bradford, except as it might be felt that the corporation of Bradford had in its hands at present great and important works which would, in the opinion of some, make it undesirable to take in hand anything further of the sort. He thought a case also might be made for inquiry if they would look at the price of gas in Bradford and the quality of the article supplied. He knew it had been generally said that they were very well off for gas, and until he came to make some inquiry himself as to the position of the town, and as long as he was content to accept mere hearsay upon the subject, he had certainly thought they were very well off; but he found from authentic returns that in many towns not better off than Bradford, as regards the manufacture of gas, the price was lower. In Derby, Warrington, Plymouth, Birmingham, Newcastle, and Walsall the price was lower than in Bradford, ranging from 2s. 4d. to 2s. 11d. per 1000 feet. As regarded the quality of the gas, he had also a return, from which

it appeared that in Manchester the price was 3s. 2d., and the quality 22 candles; in Salford the price was 3s. 4d., and the quality 20 candles; in Edinburgh the price was 4s. 2d., and the quality 32 candles; while in Bradford the price was 3s., and the quality varied from 11 to 19 candles. These figures were authentic, and might be relied upon. The comparison stood thus: If they allowed the average quality of Bradford gas to be 16 candles, which he was told upon good authority was a liberal estimate of its quality, and then if they compared it with the price which was charged in Manchester, the price that was charged in Manchester for gas of the same quality as theirs would be 2s. 3½d. The price charged in Edinburgh, taking the same proportion of quality, would be 2s. 1d. These figures, which he should be prepared to lay before the committee, if it was the council's pleasure to grant one, would show they were not so well off in Bradford, as regarded the price of gas, as they might be. He quite admitted that these figures could not represent the cost, because it was evident that the cost of the gas would be the same whether good or poor gas was supplied. But, whether they represented the cost of the gas or not, they certainly represented the value of the gas to the consumer. If that were the fact—and it was well worth inquiry into—then we were so much worse off than many towns not more favourably situated than Bradford for the manufacture of the article. In confirmation of this statement, he was told by a gentleman having a thorough knowledge of the subject, and having, in fact, a pecuniary interest in the manufacture of gas in a place in the neighbourhood of Bradford, that gas could be made, of a quality certainly not inferior to Bradford gas, for 2s. 4d. per 1000 cubic feet, including all expenses. There was another advantage which would very evidently be derived from placing the supply of gas in the hands of the corporation, and that was control over the breaking up of the streets. He had often heard complaints about the inconvenience that was caused by another foreign company having the power to break up the streets almost as they liked and when they liked, to the interruption of traffic and the annoyance of the inhabitants. It was well known that many places, some of less importance than Bradford, had taken the step which he advocated in moving the resolution. Manchester had often been quoted in this way, and sometimes the reply had been that the large profits realised at Manchester had been obtained by charging a higher price for gas. He had already quoted to them the price and quality of Manchester gas. The price was 3s. 2d., and the quality was 22 candles. He had this upon the evidence of Sir Joseph Heron, town-clerk of Manchester, examined before a parliamentary committee; and, as he (Mr. Scott) had attempted to make out, that was equal to a charge of 2s. 3½d. for gas of the same quality as was supplied at Bradford. With that price, what had been the result in Manchester? Last year they made a profit of £49,000, and, from the time that the gas-works first came into their hands, they had made a profit of a million. He was aware that Manchester went into the matter under more favourable circumstances than Bradford could. From the very first they obtained the gas-works. In Manchester they had no private company, and there was no necessity to buy it up, as there would be in Bradford, at an extravagant price. In addition to Manchester, there were many other places which had taken the course he now proposed. Glasgow last year obtained a bill to take over both companies making gas in that city. Leeds had also decided to apply for a bill, and he might state that they had done so without any inquiry, so satisfied were the council generally as to the advantages to be obtained. Sheffield, after a minute and comprehensive inquiry, and abundant evidence laid before the council, had decided almost unanimously—the only exception being some interested persons—to make an application for an Act. And in the following places, where gas-works had been taken out of the hands of private companies and put into the hands of Town Councils, the result had been most satisfactory:—Burnley, Birkenhead, Paisley, Carlisle, Oldham, Sowerby Bridge, Stockton, Bury, Port Glasgow, Rochdale, Salford, Halifax, and Manchester. When, in 1867, the Dundee Corporation contemplated going to Parliament for an Act for the same purpose, they addressed the following inquiries to a number of places:—First, whether the quality of the gas supplied had improved or deteriorated since the transfer to the Town Council; second, whether the price had advanced or declined; third, whether the acquisition of the works had proved profitable to the community, or otherwise. Of fourteen places to whom these questions were addressed, ten replied to the first question that the quality had improved; the other four replied that the quality was the same. To the second question, thirteen replied that the price had been reduced; the other, that the price was the same. To the third question, the reply from the whole of the fourteen places was uniformly that the acquisition of the works by the corporation had been a public advantage. Mr. Scott said he thought he had made out a *primâ facie* case for the appointment of a committee of inquiry, and from the evidence which had come before him during the few days that he had been able to give to the subject, he had very little doubt that such a case could be laid before the committee, that the council would never regret having consented to the motion for its appointment.

Mr. ATKINSON seconded the motion, which was carried unanimously.

On the motion of Alderman SCOTT, the Smoke Prevention and Workshops Regulation Committee were appointed to act as the committee of inquiry.

ACCIDENT TO THE CORPORATION GAS-WORKS, LIMERICK.—About one o'clock on Monday, the 27th ult., an accident occurred at the Corporation Gas-Works, in West Watergate. The morning was rather rough, with occasional squalls, equalling a hurricane, one of which caught a new gasometer, which had recently been erected on the works, and completely turned it over, smashing the supporting pillars, and causing an immediate escape of gas, which caught fire and sent a terrific flame upwards, followed by an explosion which damaged the other gasholders, but fortunately unaccompanied by any other bad result. The efficient manager of the works (Mr. Otty) had a very fortunate escape, he being but just after inspecting the premises as the explosion caused fragments of the works to fly about in all directions. Mr. Otty seeing the critical position of affairs, with the greatest presence of mind, at once got a number of men to fill the connecting-pipes with clay, thereby shutting off the gas and preventing the second gasometer from exploding. The damage which the works have sustained by the explosion is estimated at about £700.

ON THE ECONOMIC DISTILLATION OF GAS FROM CANNEL COALS.

By Dr. STEVENSON MACADAM, F.R.S.E., F.C.S.,

Lecturer on Chemistry and Consulting Analytical Chemist, Edinburgh.

[Read before the British Association for the Advancement of Science, at Exeter, and before the Royal Scottish Society of Arts.]

The experimental observations which form the basis of the present communication were undertaken for the purpose of determining the quantity and quality of gas obtained from certain mixtures of cannel coals distilled together, as compared with that yielded by the coals heated separately. The cannel coals selected for destructive distillation were sixteen in number, and comprehended examples of some of the larger coal-fields in Scotland. The experiments were conducted in a small gas-work, specially constructed and fitted up by Messrs. James Milne and Sons, gas engineers, &c., Edinburgh, and attached to the laboratory of the author, the whole being connected with fully equipped photometric apparatus. The quantity of coal experimented upon at a time was 6 lbs., and the volume of gas yielded therefrom amounted to about 30 cubic feet for each charge. Every possible care was taken to keep the retort at a uniform temperature during the course of the trials, and the testing of the same coal on several occasions showed that such was practically done.

The coals employed in the experiments, and the quantity and quality of gas obtained therefrom, may be observed from the following table:—

Yield and Quality of Gas from Cannel Coals taken Separately.

	Name of Coal.	Gas per Ton of Coal in Cub. Ft.	Illuminating Power of Gas, 5 Cub. Ft., in Candles.	Cost of 10,500 Cub. Ft. of Gas of 30 Candle Power.
*1.	Bredisholm, or Provanhall	9,434	26·81	12s. 5½d.
2.	Shields	10,703	21·22	13 10½
3.	Bank, main seam	11,524	19·82	18 7½
*4.	Cleugh	11,452	29·39	14 11½
5.	Wilsontown	10,666	25·31	18 11½
*6.	Muirkirk	10,552	37·16	16 10½
7.	Bigside	11,490	32·31	20 4½
*8.	Climpy	10,928	38·68	18 7½
*9.	Bank, 5-feet seam	9,768	27·07	16 1
*10.	Pollock	11,525	30·26	14 0
11.	Hunter's Hill	10,030	22·66	12 5½
12.	S. Boig, or Lower Lanemark	9,881	24·39	17 7½
13.	Upper Lanemark	10,479	24·56	16 6½
14.	Raploch	10,966	17·05	16 10
*15.	Haywood	11,153	30·97	15 6
*16.	Kinneil	11,789	30·60	17 ¼

Considering the original cost of the coals, the eight of the samples marked with an asterisk were selected as most economical, and the basis was laid down that the coals or mixtures of coals should yield 10,500 cubic feet of gas of 30-candle power. Calculations were made so as to observe what coals or mixtures of coals ought to give the requisite quantity and quality of gas, and the coals were used in the definite proportions calculated to yield the best results. The second series of trials proved that the illuminating power of the gas obtained from the mixtures of coals, as determined by experiment, was always in excess of that arrived at by calculation from the quality of the gas given by the individual coals taken separately, as may be observed from the following table:—

Gas from Cannel Coals Distilled Separately and Mixed.

		Quantity and Quality of Gas from One Ton of Coals taken Separately. Cub. Ft.	Candles.	Quantity and Quality of Gas from One Ton of Mixed Coals. Calculated. Cub. Ft.	Candles.	Quantity and Quality of Gas from One Ton of Mixed Coals. Experiment. Cub. Ft.	Candles.
1	Pollock	11,525	30·26				
1	Pollock, 2nd trial	11,013	31·52				
2	1 Bank, 5-feet seam 3 Haywood	9,768 11,153	27·07 30·97	10,806	30·09	10,714	32·27
3	1 Provanhall. 1 Cleugh 1 Muirkirk	9,434 11,452 10,552	26·81 29·39 37·16	10,479	31·22	10,677	32·96
4	1 Provanhall. 2 Cleugh 1 Muirkirk	9,434 11,452 10,552	26·81 29·39 37·16	10,722	30·73	10,958	32·86
5	2 Provanhall. 3 Cleugh 2 Muirkirk	9,434 11,452 10,552	26·81 29·39 37·16	10,618	30·94	10,603	33·32
6	1 Climpy 2 Provanhall. 2 Cleugh	10,928 9,434 11,452	38·68 26·81 29·39	10,540	30·30	10,565	32·91
7	4 Haywood 1 Provanhall.	11,153 9,434	30·97 26·81	10,809	30·24	10,646	32·19
8	1 Kinneil. 2 Haywood 1 Provanhall.	11,789 11,153 9,434	30·60 30·97 26·81	10,882	29·97	11,125	31·38
9	1 Kinneil. 2 Haywood 1 Provanhall. 1 Pollock	11,789 11,153 9,434 11,525	30·60 30·97 26·81 30·26	11,011	30·03	10,752	32·48
10	2 Provanhall. 2 Haywood 1 Cleugh 2 Muirkirk	9,434 11,153 11,452 10,552	26·81 30·97 29·39 37·16	10,553	31·43	10,864	33·96

These results will probably be best contrasted by throwing the quantity and quality of the gas into pounds of sperm, and the following table gives the results of the illuminating power of the coals and mixtures of coals as determined by calculation from the yield of the individual coals taken separately, and the respective proportions obtained by the distillation of the coals previously mixed, the value in each case being given in pounds of sperm:—

Yield of Gas from Cannel Coals Calculated in Pounds of Sperm.

		A. Illuminating Power of the Gas from One Ton of Coal in lbs. of Sperm, calculated from Separate Results.	B. Illuminating Power of the Gas from One Ton of Coal in lbs. of Sperm, calculated from Mixed Results.	Difference in favour of the Results from Mixed Coals in lbs. of Sperm.	Per Centage Increase of Illuminating Power in favour of Mixed Coals.
1	Pollock	1195·70	1190·16	Only one coal in this case.	
2	1 Bank, 5-feet seam 3 Haywood	1114·81	1185·39	70·58	6·33
3	1 Provanhall. 1 Cleugh 1 Muirkirk	1121·67	1206·56	84·89	7·57
4	1 Provanhall. 2 Cleugh 1 Muirkirk	1129·67	1232·45	102·78	9·09
5	2 Provanhall. 3 Cleugh 2 Muirkirk	1126·36	1211·29	84·93	7·54
6	1 Climpy 2 Provanhall. 2 Cleugh	1094·95	1192·09	97·14	8·87
7	4 Haywood 1 Provanhall.	1120·68	1174·29	53·61	4·78
8	1 Kinneil. 2 Haywood 1 Provanhall.	1113·17	1196·92	78·75	7·04
9	1 Kinneil. 2 Haywood 1 Provanhall. 1 Pollock	1133·76	1197·34	63·58	5·68
10	2 Provanhall. 2 Haywood 1 Cleugh 2 Muirkirk	1137·03	1264·94	127·91	11·25

Average per centage of increase in illuminating power 7·57, or 1-13th of the whole light obtained as gas from one ton of the coals.

The increase in illuminating power is undoubtedly due to the presence of a larger proportion of the heavy hydrocarbons, as the condensation by bromine rose

in each trial on an average of 1 per cent. of increase. The larger proportion of the heavy hydrocarbons may probably arise from several causes:—

1. The intermixture of the lighter gases of the inferior coals with the heavier gases of the better coals, thus tending to save the heavy hydrocarbons from being decarbonized or reduced by the heat of the retort.

2. The mixture of the lighter gases with the heavier gases and vapours, tending to keep the latter from separating in the condensers, purifiers, and gasholder; and

3. Probably, also, the reaction of the gaseous bodies upon each other during the moment of their liberation from the coals by destructive distillation, and when the gases are in the condition recognized as that of the nascent state, and when, as is well known, chemical reaction is most energetic.

In many parts of the country so much attention is paid to coke, that necessarily the quality of the resultant fuel obtained from the mixtures of coals must be considered. In all the experimental trials referred to in this paper, the mixed coke was at least of fair quality, and could be used with advantage in the furnaces. The general result of the inquiry therefore is, that, given a certain quantity of coals of different gas-producing powers, it is more economical to mix these coals, and thereafter heat the mixture in the same retorts at the same time, than to distil each coal separately in different retorts, and thereafter mingle the gases in the ordinary way.

ON THE EXAMINATION OF WATER FOR ORGANIC MATTER.

(*Continued from page* 944, *vol.* xviii.)

By R. Angus Smith, Ph.D., F.R.S., &c.

[From *Memoirs of the Literary and Philosophical Society of Manchester*, vol. iv., 3rd series. Communicated, with emendations and alterations, by the author, to the *Chemical News*.]

There are two columns giving the amount of oxygen required by the Clyde water. One giving the grains is correct, but, in altering the mode of expression, an error occurred not in the original. The amount in the second is in 100 millions.

Having had occasion to examine another stream, very slow, rather a canal, receiving sewage, and flowing about 20 miles, the following results were obtained with the chameleon:—

Oxygen required by the Decomposed and Decomposing Matters.

Grains per Gallon.	
2·835	1·205
1·249	1·630
1·949	1·205
1·170	1·453
0·425	0·425
0·815	0·177

The gradual diminution of the decomposed organic matter is here seen very plainly. As new sewage comes forward in certain places, the amount rises.

These numbers correspond entirely with the apparent condition of the stream; they do not, however, correspond with the total volatile matter, which was as follows:—

Volatile Matter.	Fixed Matter.
9·33	44·27
6·23	28·91
3·99	24·08
3·08	36·75
3·43	31·85
4·16	30·31
5·22	29·92
5·04	69·30

I believe the results obtained by the chameleon are more useful in a sanitary point of view than the other results.

Let us take another case.

When heavy rains drove the impure water forward, the chameleon gave the following:—

Oxygen in Grains per Gallon required for the Decomposed and Decomposing Matter.

0·992	1·106
0·284	1·134
0·638	1·276
0·709	1·347
0·992	

In such a case, the ordinary analysis gave—

Volatile Matter.	Fixed Matter.
4·20	20·72
4·48	21·21
7·14	26·39
6·02	34·02
4·27	28·28
4·69	32·27

These latter do not show at all the fine distinctions made by the permanganate, which agrees entirely with our senses, and may be used instead of them for putrid substances.

The permanganate must be used with consideration, like all other chemical tests. We must be careful that there are no lower metallic oxides in the water, which will remove the colour as suddenly as the sulphuretted hydrogen from putrid matter. Much has been said against the permanganate, but nothing even pretends to do what it does. Those who neglect it leave out the putrid matter, or drive it off in boiling. If it is used as the only reagent the results are certainly without value.

Nitrites decompose chameleon instantly. They are the result of the oxidation of azotized matter, and must be estimated.

The decomposition of the chameleon may be caused by the organic matter present, or by nitrites, &c. The presence of nitrites or nitrous acid will show if the organic matter is only recently oxidized.

Generally, there may be found organic matter and nitrites together, showing that some is oxidized, and some ready to become so.

Schönbein has found traces of nitrous acid in the efflorescence of walls. In judging of the time we must make allowance for this, and not judge from small traces such as he alludes to.

When nitrites and organic matter are found together, they may be estimated separately. the chameleon will be decomposed by both. 158 of chameleon solid is equivalent to 95 of nitrous acid, or 1000 = 606. It will be necessary to find one of the substances separately, and to subtract it from the whole, in order to find the amount of the second.

The amount of nitrous salts may be found by using ozone paper—that is, paper with iodide of potassium and starch. The water to be tried is made acid with a little dilute sulphuric acid—not more than three drops to 1000—and a drop put upon the paper. If nitrous acid is present, it becomes blue. This blue is obtained immediately by putting a drop of the solution on ozone paper when there is 1 of NO_3 in 30,000 of water; and, by waiting patiently and giving time, it may be seen with much less.

In order to find how much nitrite is in water, the solution may be diluted until the reaction ceases to be distinct, even after waiting. The amount in the water will then be 1 in 100,000. If, in another case, when we find the reaction distinct in water, we take 100 grains and add 900 to it, and find it beginning to be indistinct, the undiluted quantity must have been ten times as strong as the diluted. The amount in the 1000 grains is 1 in 100,000; the amount in the 100 grains is ten times as great, or 1 in 10,000; and thus we may arrive sufficiently near to the total amount. The amount of water added in order to bring the reaction to the adopted minimum is the measure of the strength of the solution.

A test like this depends partly on the eye and partly on the delicacy of the test-paper. The same result will be attained if the same eye and tests are regularly used.

The method of testing with paper is not so refined as the use of a larger amount of water—say 1000 to 10,000 grains. With this amount, the presence of 1 of NO_3 in 3½ millions of water may be detected on adding starch and iodide of potassium. Three drops of sulphuric acid are also added to the 1000 grains—*i. e.*, 3 grains by measure. If no nitrous acid is present, no blue colour will be seen with this amount. If nitrous acid is present, the colour will begin in a few seconds. Some may prefer one way, and some the other. I do not look on this as quantitatively very exact; I simply thought it a useful method. Some more work is required.

The methods given of estimating the amount of nitrous acid are minimetric, proceeding by dilution instead of concentration. The value with gases is better known than in liquids; but it is believed that it will be sufficiently exact with the latter in cases where pure scientific accuracy is not attainable and not necessary, and where it is important to save time, labour, expense, and patience.

Now suppose 1000 of the water decolorize 5 of chameleon, we must subtract from 5 the amount which would be due to the NO_3, which then would give the amount of chameleon solution decomposed by the organic matter.

The estimation of both is interesting; but it is much more important to obtain the total chameleon used, as the presence of NO_3 must be considered a great objection to water, partly on its own account, and chiefly because of its origin.

It is to be observed that water containing much animal matter becomes extremely acid. It is a common thing to find water extremely clear, with no apparent organic matter; even on standing, also, extremely acid, and retaining nitrates. I have found it so filled that it appeared to flow less readily than pure water, and had a most nauseous taste. It was close to a churchyard, and was considered excellent water. This perversion of taste is difficult to understand, but it must be combated; it is not natural, and causes illness and death. This acid water is an excellent solvent of metals; and, if lead is present, the solution becomes rapidly so strong as to taste of the metal. This acidity, in conjunction with nitrates, does not, so far as I know, exist when the organic matter is very old—probably because the organic acid is oxidized. Some of it—probably all—is caused by the formation of organic acids. Similar organic and entirely colourless solutions, acid, but free from nitric acid, may be found by allowing peaty water to stand, without evaporation, but in contact with the air, for some years.

In the nitrous waters, no organic matter will be apparent on burning, unless there is more than the acid can oxidize. A very white ash is, therefore, a suspicious circumstance; and, unless the matter is extremely free of organic matter, this white ash is a certain indication of nitric acid. If there is a great deal, the ash melts readily. By white is meant white as soon as it is incinerated.

These acid nitrous waters contain phosphates generally. Phosphate of lime, or even alumina and iron, may be precipitated from them by ammonia, if they are direct from animal matter, and have not passed through porous matter sufficient to deprive them of some of the less soluble substances.

There are many interesting questions to be asked regarding nitrates. I am inclined to think that their presence shows that the most dangerous state of the organic matter is past. When they appear in any solution the chief escape of putrid gas seems to have ceased; the water may, however, be still dangerous to use, and, of course, is revolting to the imagination. It will be well to examine how far these suspicions are correct. When complete nitrification has occurred, all that class of evils arising from organic matter direct are prevented.

This paper was written for a special purpose, and does not pretend to say all that may be said regarding organic matter in water. As to the purification, there are many points to be observed. It has been generally held that nitric acid is the ultimate form which nitrogenous substances of organic origin assumes; but we must remember that plants have the power of decomposing nitrates, and of using the nitrogen for their own purposes. There are conditions, therefore, in which the organic matter may be entirely removed from water; and, when we remember how readily soils absorb phosphates and potash, we easily see why common salt should chiefly be left. The oxygen of the nitrates may even be used for the purification of water, whilst the earthy salts and phosphoric acid are precipitated. This operation of decomposing the nitrates seems to be the final one which is at hand for purifying water, and probably explains the marvellous results we frequently see. This decomposition is performed by living plants apparently; but some observations seem to indicate that the effect may be produced by the organic dead matter in water. The nitrites found in plants by Schönbein may possibly have been formed from the nitrates by deoxidation.

Animal and Vegetable Matter—The Common Salt of Sewage.

This subject deserves a further separate treatment.

As animals are formed out of vegetables, the elements which compose each are of course the same; and even the proximate organic principles are difficult to distinguish, especially in a state of decomposition. Still, it is remarkable what a clear insight is given into the quality of water by simply boiling down a few thousand grains and burning the residue. We can, by the eye and the smell, detect humous or peaty acids, nitrogenous organic substances, and nitrates, and estimate their amount to a very useful point of accuracy. There may be times when this is the only experiment that can be made. After doing this, and trying other methods many hundred times, I still return to it as delicate, and little liable to fail. The want of numerical results is a serious objection, rendering the plan unfit for use when public reports are to be made of the analyses; but it is an excellent guide for the chemist in his laboratory; we may even decide by it the animal or vegetable origin of the matter.

This, however, is not enough; we require to obtain some knowledge of the quantity as well as of the quality, and we even require to know something of the previous history of the water, supposing decomposition to have gone so far that nothing definite can be affirmed as to the organic substances. It has already been shown that the carbon and the nitrogen may entirely disappear, the phosphorus may be precipitated, and the sulphur be, to a large extent, removed, nothing whatever remaining of the original substances, except alkalies, some of the alkaline earths, and chloride of sodium, or common salt. The latter, in reality, is the only substance which, so far as I know, is neither dissipated nor precipitated in whole or in part, potash excepted. The common salt, therefore, may be taken as an indication of the amount of original or organic matter, if we subtract from it any portion which we know to have appeared originally connected only with inorganic substances.

Perhaps all natural waters contain common salt, although rain, in a quiet day and in a clear district, is nearly free from it, possibly, in some places, entirely so. In passing through the soil it always collects some chlorides; some of these are the measure of the amount of vegetable matter decomposing in the soil. If we were to estimate the amount of chlorides dissolved by the water alone out of the inorganic soil, and substract that from the total, we should obtain the amount dissolved by the action of vegetation breaking down the rocks or soil, allowing for rain also. If the organic matter were decomposed, the common salt would still flow down the streams, and tell its tale. These quantities, however, vary excessively on every soil, and in every climate, and with every wind and degree of wind.

The common salt which comes down our streams comes from the wear and tear

both of animals and vegetables in the process of living. We cannot tell which comes from the animals and which from the vegetables.

From pasture-land, and land generally, the greatest amount is from vegetation; and, if we collected the organic matter, we should find also there that vegetation gave the greatest amount of matter, except from recently manured fields, or when the water comes from shallow or surface drains, where the land had upon it a good deal of animal matter.

When, however, we come to towns or great collections of animals, the chlorides, as well as the organic substances with which they are allied, are the products mainly of changes taking place in animal life. Let us compare the amount of chlorides to be found in plants and in animals.

Chlorides in the Blood of Animals (Nasse and Poggiale in Gmelin) *as Chloride of Sodium in* 1000 *Parts.*

Dog	4·490
Cat	5·274
Horse	4·659
Calf	4·804
Goat	5·175
Sheep	4·895
Rabbit	4·092
Swine	4·281
Goose	4·246
Hen	5·396

If we take the ashes, the amount is, according to Stölzel—

For ox blood	51·190
For ox flesh	4·860
Ashes of the serum in man*—	
Chloride of sodium	61·087
Chloride of potassium	4·085
The ashes of the blood in man	57·641
The ashes of the blood of the horse, according to Lehmann	67·105
Urine	22·972

But, as the latter is produced so rapidly and frequently, it is the greatest and most constant source of common salt. No plant can be compared with animals in this respect.

Chlorides in Vegetable Matter.

Ashes. Name of Plant.	Chloride of Sodium.					Chloride of Potassium.					
Wheat grains	0·27	0·55	0·64	1·60	0·34	Way and Ogston.					
In the whole ash		10·09	Weber.								
Ripe oats grains		0·92	0·07	0·45	1·24	Way and Ogston.					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
Buckwheat straw	4·55	3·01	3·19	3·75	3·38	1·69	7·41	25·93	0·77	3·13	6·85	9·70
				E. Wolff.						E. Wolff.		
Barley straw with chaff	3·07	5·68	2·14	4·37	..		0·90					
		5·56	Way and Ogston.									
Barley grains	0·56	1·44	0·41	0·61	0·72	1·59	..	1·29				
			2·01	..	..	..	..	..	1·93	Way and Ogston.		
Ripe oats straw—												
Middle		3·03										
Bottom		15·36	J. P. Norton.									
Radishes root		10·89	Herapath.									
Chestnut—												
Young wood								9·67				
Green shell								15·42	2·20	Wolff.		
Asparagus	7·97		12·94									
	Schlienkamp.		T. Richardson.									
Tea	2·40	2·15	2·25		4·66	3·25						
	Spooner.		Twis.		Hague.	Homes.						
Orange-tree root			1·18									
,, ,, stem			0·25	Rowney and Blow.								
Beech	6·68	0·62	Witting.									
Birch	7·17	9·84	Witting.									

When animals decay, they must, according to the above analyses, give out much more common salt than the same amount of vegetable matter, and this we find to be the case in the drainage of graveyards. But it is from living animals we find the greater amount of common salt: that which goes into the blood is rapidly thrown out, and as we take with our food amounts varying from 100 to 250 grains of common salt per day—let us say 150—an equal amount must be abstracted from us. It is for this reason sewage water constantly is found to contain common salt, increasing according to the amount of sewage. For this reason common salt is found in the saltpetre of all countries. It is a part taken from the blood of the dead or the living animal, remaining with the nitrogen unchanged, even when the organic matter has been so highly oxidized that nitric acid takes the place of albumen.

Pure spring or very fine stream water gives only a slight precipitate with nitrate of silver. This has a bluish tinge, not being dense enough to become white. When there is more than this slight precipitate, nitric acid is generally found, especially if the water has passed through porous materials.

These tests must be used and the inferences drawn with great discretion. We know that near the sea there may be found a certain amount of chlorides in the springs, rising, according to circumstances, until the water becomes brine. The same thing occurs near great deposits of salt, such as in Cheshire and elsewhere. There are, also, saline wells scattered over most countries, the origin of whose chlorides is quite unknown to us. There is in the rain driven violently from the sea an amount of common salt sufficient, on crystallizing, to dim the windows of houses many miles inland. In manufacturing towns where coal is burnt the rain contains more chlorides than rain in the country. Many large districts of tropical countries contain nitrates and common salt in the soil, but these salts in all probability result from oxidized animal matter. Chlorides are found in some districts in this country rather in excess of the average from superficial causes. But notwithstanding all these exceptions, which appear for the moment numerous, I must still consider that the test is one which may be generally used.

In England it is almost universally the case that the presence of much chloride in drainage water indicates drainage from animal matter, and no water containing chlorides to a great extent ought to be used without careful examination as to the source. One grain per gallon is too much, and is, in many places, to be suspected of being caused by impure drainage. Of course we must in this case, as in all inquiries, be careful that no disturbing causes intervene. In this country chlorides may be given out from manufactories, in which are constantly made chemical experiments sufficiently large to interfere with our accuracy if we are not very careful.

It may be supposed here that I am adding many qualifications, but the same may be done in the case of nearly all experiments. No experiment is of value unless it is viewed on all sides to prevent the admission of errors, and I do not know that more care is required in this case than in many others. In the case of chlorides we learn readily the average amount in a district, either in the rain or the drainage, and we detect the smallest increase. Any amount of common salt above the average of the district obtained in a well in a city or camp, or near habitations of men or animals, is an almost certain proof of impure drainage. When the clue has been followed up, I have found the origin in a sewer or some such spot, times without number and for many years. The presence of the sea or manufactories, or of disturbed strata with mineral waters, will seldom, after all, cause any error with a careful person.

Nitrates are very common in small quantities. They are found in water from manured land, in gardens, wells near houses, and, as a consequence, in nearly all town wells; in great abundance near churchyards, if the drainage is direct. They are not necessarily found in sewage which has not flowed through strata. The amount from the atmospheric sources is so minute that it will not interfere with any inquiry regarding the wholesomeness of water at present.

Although caution must be exercised in drawing conclusions from the presence of the chlorides, their absence may be held as conclusive against the presence of decomposed animal matter and excretions of animals in great quantities.

If chlorides and nitrates are found together in water, we may take it for granted that animal matter has existed there, or does exist in the water. Of course a very rigid scientific inquiry shows at once that vegetable matter may be present, especially from grain or seeds; but, practically, this need not affect the question, especially in a sanitary point of view, because, if this accumulation of vegetable matter occurred capable of giving as much nitrogen as animal matter, it would be sufficiently, and perhaps equally, hurtful when putrid.

If chlorides and nitrates are found in water still capable of decomposing chameleon, the presence of animal matter, or injurious gases or nitrites, may be assumed, a part only being oxidized.

If the chlorides and nitrates are present, but the power of decomposing chameleon absent, then animal matter in a putrefying state is absent, but whether it disappeared minutes or ages before is not shown by chemistry.

The chloride of sodium in a sewage stream of a very sluggish nature was estimated. The following numbers were obtained in a course of 14 miles:—

8·97	6·25	7·93	6·62
7·53	7·78	7·78	40·89

The numbers are pretty uniform, although they rise and fall with evaporation and the additions made to the stream; but whenever certain manufactures come in, a sudden rise is observed. Before this occurs, I believe the chloride of sodium is a perfectly exact comparative measure of the amount of sewage. It may, in many cases, also be made into a positive measure. This will, however, depend on the mode of managing the sewers.

The conclusion simply is, that chloride of sodium is the most abiding constituent of sewage water, and, with due precaution, the best index of comparative amounts in the original sewage. When decomposition has not taken place, it may also be used for indicating the comparative strength or value of sewage water.

Perhaps it will be thought that in here speaking of the impurities of water, when the River Commissioners are making their inquiry in Lancashire, it would be better if I spoke less of the laboratory side of the question, and more of the great evils which have destroyed the beauty and use of our rivers. On one important point I am of the same opinion which, years ago, I expressed in this society—that we waste an enormous amount of water. We throw into a stream, without compunction, impurities which will destroy the value of many hundred times, or perhaps thousand times, their bulk; and this evil may, to a certain extent, be cured with our present knowledge. We try in vain to take out that which we have thrown in. A large part of the evil can be cured by little trouble, although I confess that there is much remaining which demands more time and space than is everywhere conveniently found. Time and space, although by many treated as mere forms of thought, are expensive in Lancashire.

The following may be regarded as a summary of the results required for sanitary purposes:—

1. Quality of the organic matter.
2. Condition of the gases of decomposition.
3. Organic matter: easily decomposed organic matter, and slow to decompose.
4. Nitrates as remnants of organic matter.
5. Nitrites.
6. Chlorides, with precautions, as indicating animal sources when greater accuracy is wanted.
7. Oxygen of the dissolved air as indicating the activity of the decomposition.
8. Total organic matter. [This the author found by weighing.]
9. The usual inorganic analysis, to be spoken of in a second paper.

The author considered that, for purely sanitary purposes, the Nos. 1, 2, 3, and 6 were the most important.

The organic matter may be divided into many parts; nitrogenous into several parts; and carbonaceous into several. The total nitrogen has been taken by Dr. Frankland very carefully, and the mode of taking oxides of nitrogen improved. The division of the nitrogenous into separate parts has been begun by Wanklyn. The carbonaceous has not been much studied of late years.—*Chemical News.*

CHARTERED GAS COMPANY'S BECKTON WORKS.—We learn that Messrs. W. Parkinson and Co., of Cottage Lane, City Road, have received instructions to erect four large station-meters, each to pass 100,000 cubic feet per hour, at the above works.

THE ABBEY MILLS PUMPING-STATION.—A serious accident occurred at the Abbey Mills Pumping-Station of the Metropolitan Board of Works on Tuesday, Dec. 21, in consequence of which the pumping operations have been entirely stopped, and must remain so for a considerable period. About five o'clock in the evening, while five engines out of the eight were at work, the air-chamber suddenly burst, happily without doing much damage, so far as regards other machinery, and without injury to any of those at work in the building, although it is stated some of the engineers had a narrow escape. From the time which will be occupied in effecting the necessary repairs, at least a month must elapse before the pumping can be resumed; but the engineers are engaged in making the most strenuous efforts to repair the damage with as little delay as possible. In consequence of the accident the low-level sewer necessarily became overcharged, and the neighbourhood of Blackwall was inundated on each rising of the tide. In order to relieve the low-level sewer, it is believed that portable engines will be fixed at various points along its course, while measures are proceeding as rapidly as possible for clearing the accumulation at the pumping-station itself and attending to the requisite repairs.

BURSLEM AND TUNSTALL GAS COMPANY.—At a recent meeting of the directors of this company it was resolved to reduce the price of gas to 3s. per 1000 feet to all manufacturers, and to 3s. 2d. to all other consumers.

SERIOUS GAS EXPLOSION AT YARMOUTH.—A most serious gas explosion occurred on Monday morning, the 20th ult., at the offices of Messrs. Bracey and Son, Exmouth Road East, Queen's Road, South End, Yarmouth. Messrs. Bracey are the proprietors of an extensive steam ropery, and employ between fifty and sixty men and boys. Contiguous to, but detached from, the rope manufactory was a neat brick building, used as a public and private office, and for other business purposes. The roof of the building was covered with lead, a chimney, 50 feet in height, connected with the engine-room, standing at the south side of the house. On the Saturday previous an unpleasant smell of gas was observed, but measures of a precautionary nature having been adopted, no danger was apprehended, and the offices were closed as usual. Early on Monday morning the clerk, Mr. C. Bunn, on entering the premises found that the rooms were strongly impregnated with gas. He judiciously opened the windows, and Mr. J. Bracey arriving soon afterwards, directed that a gas-fitter, named Rainer, should be sent for. Mr. Rainer was speedily in attendance, but with a want of caution which is the more surprising considering his ordinary occupation, lit a candle, and placed it beneath a plank in the flooring, which he had previously lifted in order to discover the leakage. Instantly there was a terrific explosion. Mr. Rainer was hurled to some distance, and was very much burnt about the face, body, and right knee, his features being sadly disfigured. The building was utterly destroyed; the roof was blown off, the walls were knocked down, and, indeed, not one brick was left standing on another. Thomas Moss, the storekeeper, who was assisting

* Robin and Verdeil's "Traité de Chimie Anatomique."

Rainer, was much bruised; and another man, named Locket, who was passing at the time, was much injured. Rainer was conveyed to the hospital. The engine-room and shaft attached to the offices were not damaged. It is most fortunate that no lives were lost. The damage is estimated at upwards of £200. We understand that the accident is attributed to a fracture in the pipe leading from the meter in the steam ropery to the offices.—*Norfolk Chronicle.*

Register of New Patents.

3843.—GEORGE HENRY BENSON, of Stalybridge, in the co. of Chester, engineer, and WILLIAM GEORGE VALENTIN, of the Royal College of Chemistry, chemist, for "*Improvements in the generation or production of combustible gases, and in the apparatus employed therein.*" Patent dated Dec. 17, 1868.

In carrying out this invention a close vessel or furnace is employed, built of refractory material, such as fire-bricks, ganister, or other suitable material, and resting on columns. It may be built of a round, square, rectangular, or other suitable form or shape, and be provided with a hopper or hoppers for feeding the fuel. It is preferred to make the portion of the furnace or gas-generator which contains the upper portion of the fuel rectangular and oblong. The sides are inclined inwards at their lower part, at an angle of about 45 degrees. These slopes or inclined planes are sometimes made of iron boxes, which can be kept full of water, and may be constructed either as close or open vessels. The lower portion of the apparatus is made, by preference, circular, but narrower than the upper part, and contains the most strongly ignited portion of the fuel. The blast is made to play directly upon it from several tuyers formed in water-boxes, which by preference are made somewhat wedge-shaped, and form segments of a circle. Thus the wall of this lower portion of the gas-generator is formed of the interior circular ends of the water-boxes. The size and particular form of the gas-generator will depend in a great measure upon the nature of the fuel to be operated upon.

3879.—ROBERT WILSON, of the Bridgewater Foundry, Patricroft, near the city of Manchester, engineer, for "*Certain improvements in machinery or tools for cutting metals and other materials, part of which is applicable to hydraulic and other machines.*" Patent dated Dec. 21, 1868.

The peculiarity of this invention consists in the use of two nuts, one of which is constructed so that it can be turned round in its socket when required, and thus made to take up the slack caused by the wearing of the nut or screw. Two or more rests or supports are introduced, which are connected with each other, and which are made to travel below the screw, and so support it when the nuts are near to either end of the screw. The worm is made double, or in two lengths, having room between the parts for screwing or tightening up when either or both the worm-threads, or rackteeth, or cogs, are worn.

3894.—PIERRE GABRIEL JARRE, of 37, Boulevard Bonne Nouvelle, Paris, in the empire of France, engineer, for "*A hydro-pneumatic pump.*" Patent dated Dec. 21, 1868.

The object of this invention is to provide a means of employing any given motive power for drawing liquid from a spot which may be far from the motor, and of conducting it automatically wherever desired. The liquid is drawn from the place where it is found, and forced to the place where it is required, without the use of a single apparatus which cannot be easily inspected and repaired. Near the selected motor an ordinary air-pump is placed, the piston of which sucks and forces air. Two pipes, the one conducting the drawn or sucked and the other the forced or compressed air, pass from this pump to the place from which this liquid is to be taken. A little above the level of this liquid is a reservoir communicating by a pipe with the liquid to be drawn, and by another pipe with the spot to which it is to be conducted. Each of these pipes is furnished with an ordinary clack-valve, working so that the liquid sucked in to the reservoir cannot return, and that the liquids forced from the reservoir cannot come back into it. The lid of this reservoir carries two apparatuses—the distributor and the float. The distributor is composed of two cylindrical pipes, the axis of each meeting at right angles. This combination of pipes may be dismounted in two pieces, it being cut by a plane passing through the two axes. Each piece has two circular flanges or thimbles to receive the valve-chambers. On the side by which the compressed air arrives a valve plays between two seats, so as to cause the forced or compressed air to communicate either with the reservoir or the outer air. On the right, two valves, fixed on the same axle, play in such a manner that when the one is open the other is closed, and thus cause the suction to communicate either with the outer air or with the reservoir. The axles of the valves are linked to a vertical rod by means of two small connecting-rods, the axles being guided by the actual seats of the valve.

3895.—WILLIAM EDWARD GEDGE, of the firm of John Gedge and Son, of 11, Wellington Street, Strand, in the co. of Middlesex, patent agent, for "*An improved construction of cock or tap.*" A communication. Patent dated Dec. 21, 1868.

The interior arrangement of this cock consists of a metal lid or cap, pierced for the passage of the stem or plug, which governs the movement, and screwed on the box, either interiorly or exteriorly, a washer of leather, india-rubber, gutta-percha, or any other malleable and impervious material, seized by the inner or outer screw of the cap, and also permitting the passage of the stem or plug governing the movement, and to which is fitted indifferently a key, handle, or spanner, of any desired form. This stem passes through the metal cap and leather washer, and carries, so as to form one piece with it, an inner disc of metal coming on to a leather washer situated above it, and acting as an obturator. There is another stem or plug, independent of the first, but governed by it in the circular movement by the aid of a mortice, which unites them at a certain point. This stem, like the upper one, has a metal disc of one piece with it, and bearing upon a second washer of leather, india-rubber, or analogous material, which washer rests upon another disc, supporting the entire arrangement, and forming part of the cock, being cast with or brazed to it. This second leather washer is kept in place and prevented from following the circular movement by a ring or other means. A helical spring is placed between the two metal discs, tending to press them on the two leather washers above and below them. The axis and washer are pierced with two openings, passing through all three in a direct line. These openings may, according to the description of cock, be four in number, or there may be but a single one; it is only requisite that the disc should be able to close them, as will now be explained. The water arriving by the barrel fills the box or chamber of the cock, and by its pressure pushes the two metal discs against the two leather washers, perfectly closing the chamber top and bottom. The helical spring is intended to assist this water power should its pressure be insufficient, and it may, therefore, be used or dispensed with according to requirement.

APPLICATIONS FOR LETTERS PATENT.

3618.—WILLIAM COLLETT HOMERSHAM, of 2, Willes Road, Kentish Town, in the co. of Middlesex, civil engineer, for "*Improvements in pipes and conduits, and in the joints thereof.*" Dec. 15, 1869.

3619.—NICHOLAS PROCTER BURGH, of 78, Waterloo Road, in the parish of Lambeth, in the co. of Surrey, engineer, for "*An improved double or single acting pump.*" Dec. 15, 1869.

3634.—JOSEPH HEAP, of Hampstead Road, in the co. of Middlesex, carpenter, for "*Improvements applicable to earth-closets or commodes and urinals.*" Dec. 16, 1869.

3650.—GEORGE WEIR, of Glasgow, in the co. of Lanark, N.B., engineer, for "*Improvements in slide-valves.*" Partly communicated. Dec. 17, 1869.

3666.—WILLIAM POTTS, of Handsworth, in the co. of Stafford, manufacturer, for "*An improved apparatus for effecting or promoting the ventilation of rooms or buildings, and for preventing down draught in chimneys.*" Dec. 18, 1869.

3667.—RICHARD NEVILL, of Wern Iron-Works, Llanelly, in the co. of Carmarthen, South Wales, for "*Improvements in the manufacture of retorts and annealing-pots and stands.*" Dec. 18, 1869.

3681.—GEORGE NEWSUM, of Hunslet, Leeds, in the co. of York, machinist, for "*Improvements in means or apparatus for pumping.*" Dec. 20, 1869.

3682.—GEORGE THOMAS LIVESEY, of the South Metropolitan Gas-Works, Old Kent Road, in the co. of Surrey, for "*Improvements in apparatus used in the manufacture of gas.*" Dec. 20, 1869.

3690.—WILLIAM GALLOWAY, of Francis Street, in the co. of Middlesex, mining engineer, for "*Improvements in joints or couplings for pipes, rods, and other like articles, which improvements are also applicable for stopping pipes, bottles, casks, and similar receptacles.*" Dec. 20, 1869.

3719.—ROBERT SPEAR, of New Haven, Connecticut, U.S.A., for "*Improvements in pneumatic engines for raising water, more especially designed for draining mines.*" (Complete specification.) Dec. 23, 1869.

3736.—WILLIAM ROBERT LAKE, of Southampton Buildings, London, consulting engineer, for "*Improvements in the manufacture of metal tubing.*" A communication. (Complete specification.) Dec. 24, 1869.

3742.—HENRY JOHN GIRDLESTONE, civil engineer, and JOHN WARD GIRDLESTONE, civil engineer, both of 37, Norfolk Street, Strand, in the co. of Middlesex, for "*Improvements in 'dry' closets, commodes, and urinals.*" Dec. 24, 1869.

3756.—ALFRED UPWARD, of the Chartered Gas Company, 146, Goswell Road, civil engineer, JAMES EANNETH, of Great Queen Street, sanitary engineer, and the Rev. THOMAS PELHAM DALE, of 6, Ladbroke Gardens, Notting Hill, all in the co. of Middlesex, for "*Improvements in the manufacture and purification of gas, and in the utilization of waste and bye products of gas-works.*" Dec. 28, 1869.

3771.—JOHN RICHARDSON WIGHAM, of Albany House, Monkstown, in the co. of Dublin, Ireland, gas and lighthouse engineer, for "*Improvements in gas-burners for illuminating beacons, buoys, and lighthouses.*" Dec. 30, 1869.

GRANTS OF PROVISIONAL PROTECTION.

3554.—EDWIN WALKER, of Heckmondwike, in the co. of York, plumber, for "*Improvements in gas-burners.*" Dec. 9, 1869.

3558.—JOHN LOADER, of Upper Clifton Street, Worship Square, E.C., and WILLIAM HENRY CHILD, of Worship Street, both in the co. of Middlesex, for "*Improvements in liquid-meters.*" Dec. 9, 1869.

3565.—CHARLES ANTONIO M'CALLA, of Northampton Street, Birmingham, in the co. of Warwick, engraver and enameller, for "*Improvements in closing and stoppering bottles, tubes, and other such vessels, and in the means of regulating and measuring the flow of liquids from such vessels.*" Dec. 9, 1869.

3569.—GEORGE FOX LOGAN, of Glasgow, in the co. of Lanark, N.B., for "*A new or improved means for utilizing waste heat and for consuming smoke, which is also applicable for drawing off and consuming noxious gases or vapours.*" Dec. 10, 1869.

3618.—WILLIAM COLLET HOMERSHAM, of 2, Willes Road, Kentish Town, in the co. of Middlesex, for "*Improvements in pipes and conduits, and in the joints thereof.*" Dec. 15, 1869.

3619.—NICHOLAS PROCTER BURGH, of 78, Waterloo Road, in the parish of Lambeth, in the co. of Surrey, engineer, for "*An improved double or single acting pump.*" Dec. 15, 1869.

3634.—JOSEPH HEAP, of Hampstead Road, in the co. of Middlesex, carpenter, for "*Improvements applicable to earth-closets or commodes and urinals.*" Dec. 16, 1869.

3666.—WILLIAM POTTS, of Handsworth, in the co. of Stafford, manufacturer, for "*An improved apparatus for effecting or promoting the ventilation of rooms or buildings, and for preventing down draught in chimneys.*" Dec. 18, 1869.

3681.—GEORGE NEWSUM, of Hunslet, Leeds, in the co. of York, machinist, for "*Improvements in means or apparatus for pumping.*" Dec. 20, 1869.

3690.—WILLIAM GALLOWAY, of Francis Street, in the co. of Middlesex, mining engineer, for "*Improvements in joints or couplings for pipes, rods, and other like articles, which improvements are also applicable for stopping pipes, bottles, casks, and similar receptacles.*" Dec. 20, 1869.

INVENTION PROTECTED FOR SIX MONTHS ON THE DEPOSIT OF A COMPLETE SPECIFICATION.

3736.—WILLIAM ROBERT LAKE, of Southampton Buildings, London, consulting engineer, for "*Improvements in the manufacture of metal tubing.*" A communication. Dec. 24, 1869

NOTICES TO PROCEED.

2414.—WILLIAM EDWARD NEWTON, of 66, Chancery Lane, in the co. of Middlesex, civil engineer, for "*Improvements in centrifugal pumps.*" A communication. Aug. 12, 1869.

2478.—ARCHIBALD GILCHRIST, of Glasgow, in the co. of Lanark, N.B., engineer and shipbuilder, for "*Improvements in slide-valves.*" Aug. 19, 1869.

2482.—FREDERIC BRABY, of Fitzroy Works, Euston Road, in the co. of Middlesex, for "*Improvements in the means and apparatus for the manufacture of caustic ammonia and ammoniacal salts.*" Aug. 19, 1869.

2685.—WILLIAM EDWARD NEWTON, of 66, Chancery Lane, in the co. of Middlesex, civil engineer, for "*An improvement in pumps.*" A communication. Sept. 14, 1869.

3036.—ASTLEY PASTON PRICE, of 47, Lincoln's Inn Fields, in the co. of Middlesex, consulting chemist, for "*Improvements in the purification of coal gas.*" A communication. Oct. 18, 1869.

3224.—ALEXANDER CARNEGIE KIRK, of Glasgow, in the co. of Lanark, N.B., engineer, for "*Improvements in or connected with retorts.*" Nov. 9, 1869.

3322.—JOHN WOODWARD, of Queen's Foundry, New Islington, Ancoats, in the city of Manchester, in the co. of Lancaster, engineer, for "*Improvements in gas and water or other liquid meters.*" Nov. 18, 1869.

3395.—JOHN BIRCH PADDON, of Hove, in the co. of Sussex, civil engineer, for "*Improvements in apparatus used in the manufacture of gas.*" Nov. 24, 1869.

3479.—FELIX NAPOLEON TARGET, of Colyton, in the co. of Devon, gentleman, for "*Improvements in water-closets.*" Dec. 1, 1869.

3524.—HUNTER HENRY MURDOCH, of 7, Staple Inn, in the co. of Middlesex, patent agent, for "*Improvements in and apparatus for forming and joining the ends of iron and other tubes or pipes.*" A communication. Dec. 6, 1869.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £50 BEFORE THE EXPIRATION OF THE THIRD YEAR.

3226.—ALEXANDER COLVIN FRASER, "*Improvements in apparatus used in the manufacture of gas.*" Dec. 7, 1866.

3242.—WILLIAM WARREN, "*Improvements in pumps.*" Dec. 8, 1866.

3258.—EDMUND SMALL CATHELS, "*Improvements in apparatus for conveying and regulating the supply of gas.*" Dec. 11, 1866.

3308.—WILLIAM CLARK, "*Improvements in carburetters.*" Dec. 15, 1866.

3332.—SAMUEL BUXTON, "*An improved stench-trap.*" Dec. 19, 1866.

Share List of Provincial Gas Companies.

(Directors and Managers of Gas-Works are earnestly requested to enable us to rectify any errors and fill up the omissions in the following List.)

The Companies whose names are printed in italic type are incorporated by Act of Parliament.

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Last Quotation.
	£	**ENGLAND.**	£ s d	£ s d	£ s d
1200	5	Aberdare	5 0 0	10 0 0	6 10 0
		Aber. & Abera. Cons.			
		Aberdovey			
400	5	Abergele (Lim.)	5 0 0	4 0 0	5 0 0
		Abertillery G. & W.			
		Aberystwith			
800	12½	Abingdon	12 10 0	8 0 0	15 0 0
1050	10	*Accrington G. & W.*	10 0 0	& Bns.	15 0 0
1050	10	Do., new shares.	10 0 0		15 0 0
2100	5	Do., do.	5 0 0		7 10 0
2100	5	Do., do.	1 0 0		1 10 0
2100	2½	Do., do.	0 10 0		0 15 0
1200	5	Airdale (Limited)	5 0 0	10 0 0	8 10 0
300	5	Do., new shares.	0 10 0	3 0 0	
24	75	Alcester	75 0 0	4 0 0	80 0 0
128	10	Aldborough (Lim.)	10 0 0	5 0 0	
269	10	Alderney	10 0 0	5 0 0	11 0 0
2500	10	*Aldershot G. & W.*	6 10 0	4 0 0	
		Aldrington, B., & H.			
300	6	Alfreton	6 0 0	5 0 0	5 10 0
		Alnwick			
		Alston Moor			
250	10	Alton	10 0 0	10 0 0	12 0 0
1600	5	Altrincham	5 0 0	6 0 0	6 0 0
		Ambleside District, Amersham [£8000			
		Amlwch (Lim.)			
170	10	Ampthill	10 0 0	4 0 0	9 0 0
350	10	Andover	10 0 0	6 0 0	12 10 0
358	5	Appleby	5 0 0	2 10 0	2 15 0
	5	Arlesey (Limited)			
260	10½	Arundel	10 10 0	7 10 0	
250	10	Ashbourne, Derby.	10 0 0	6 0 0	13 10 0
292	5	Ashburton	5 0 0	5 0 0	
84	30	Ashby-de-la-Zouch	30 0 0	6 0 0	
700	10	Ashford (L.), Kent	10 0 0	6 0 0	11 10 0
1600	30	*Ashton-und-Lyne.*	30 0 0	10 0 0	60 0 0
		Aspatria			
590	5	Atherstone	5 0 0	9 0 0	8 10 0
		Attleborough			
		Axminster			
900	12	Aylesbury	10 0 0	7 10 0	12 0 0
150	10	Aylsham (L.), Nrfk	10 0 0	5 0 0	12 10 0
3093	10	*Bacup (Rossendale Union)* ordinary		& Bns.	
			10 0 0	10 0 0	16 0 0
600	10	Do., preference	10 0 0	10 0 0	16 0 0
2597	10	Do., new issue	6 0 0	10 0 0	11 0 0
1503	10	Do., 2nd new iss.	8 0 0	7 0 0	10 0 0
300	5	Bakewell	5 0 0	8 0 0	8 0 0
200	10	Baldock	10 0 0	7 10 0	
1000	10	*Banbury* (Limited)	10 0 0	8 10 0	15 15 0
500	10	Do., new shares	7 10 0	7 0 0	10 10 0
2650	10	*Bangor Gas & Wr.*	10 0 0	8 0 0	14 0 0
		Barking			
		Barmouth (L) £1500			
260	10	Barnard Castle	10 0 0	5 10 0	10 15 0
800	5	Barnet	5 0 0	6 0 0	5 10 0
		Barnsley		7 10 0	
109	20	Barnstaple	20 0 0	7 10 0	
109	20	Barnstaple (Lim.)	20 0 0	& Bns.	
		Barrow-in-Furness Gas and Water			
1158	2	Barton-on-Humb.	2 0 0	5 0 0	2 0 0
120	25	Basingstoke	25 0 0	8 0 0	35 0 0
120	10	Do.	10 0 0	8 0 0	14 0 0
		Baslow (Derby)			
2500	16	*Bath*, A shares	16 0 0	8 0	38 10 0
2500	8	Do., B shares	8 0 0	0	united
2500	10	Do., C shares	10 0 0	7 0 0	15 0 0
5000	10	Do., D shares	4 0 0	7 0 0	6 2 0
		Battle £2000		6 0 0	
56	26½	Bawtry	26 12 6	6 0 0	25 0 0
300	5	Beaconsfield (L.)	5 0 0	4 10 0	5 0 0
		Beaminster			
710	10	*Beccles Gas & Wr.*	10 0 0	2 10 0	
		Bedale, Yorkshire			
300	30	*Bedford*	25 0 0	4 0 0	20 0 0
390	10	Bedworth	10 0 0	5 0 0	10 0 0
300	3	Belford	3 0 0		1 10 0
400	10	Belper	10 0 0	10 0 0	18½ to 19
	10	Bentham (Limited)			
		Berkhampstead			
1086	10	Berwick & Tweedmouth	10 0 0	10 0 0	16 10 0
120	20	Bewdley	16 0 0	5 0 0	16 0 0
200	10	Bicester	10 0 0	5 10 0	11 0 0
		Biddulph, Bradley Gr., & Black Bull			
330	10	Bideford	10 0 0	6 0 0	10 10 0
		Biggleswade			
		Billericay			
200	10	Billingboro' & Hor.	10 0 0	8 10 0	12 10 0
6000	5	*Bilston*	5 0 0	6 0 0	6 10 0
200	10	Bingham	10 0 0	4 0 0	
		Birchington (Lim.)			
1200	80	*Birmingham*, A sh.	80 0 0	9 0 0	135 0 0
400	8	Do., B shares	8 0 0	9 0 0	13 10 0
3750	40	Do., new shares	40 0 0	7 10 0	56 10 0
2400	50	*Birmingham and Staffordshire*	50 0 0	10 0 0	99 0 0
2400	25	Do., new shares	25 0 0	10 0 0	49 10 0
7020	20	Do., do.	20 0 0	10 0 0	39 12 0
12500	28	Do., do.	16 0 0	7 10 0	25 10 0
250	16	*Birstall*	12 0 0	12s. 6d. per sh.	12 0 0
		Bishop's Auckland		5 0 0	10 0 0
180	10	Bishop's Castle	10 0 0	5 0 0	10 0 0
230	10	Bishop's Stortford	10 0 0		
		Bishp's Withm (L)			
6000	15	*Blackburn*, A sh.	15 0 0	9 0 0	27 0 0
6000	15	Do., B shares	2 0 0	6 15 0	3 10 0
	5	Blaenavn. (L) £4000			
		Blaenavon G. & W.			
		Blandford			
		Blyth & Cowpen			
		Bodmin			
		Bodmin Consumers			
		Bognor			
100	10	Bolsover	10 0 0		10 0 0
3909	16½	*Bolton*	16 10 0	10 0 0	35 0 0
7466	16½	Do., new shares	13 0 0	6 10 0	18 5 0
		Boroughbridge (L)			
2000	10	*Boston*	10 0 0	8 10 0	17 10 0
	5	Boston Spa (Lim.)	5 0 0	6 10 0	5 10 0
		Botesdale (L), Suff.			
	5	Bottesfrd. (L) £1500			
200	5	Boughton Blean	5 0 0	5 0 0	5 0 0
193	10	Bourn	10 0 0	5 0 0	
		Bournemth. G. & W.			
160	10	Brackley	10 0 0	6 0 0	10 0 0
		Bracknell (Lim.)			
		Bradford, Wilts			
	25	*Bradford, Yorksh.*	25 0 0	10 0 0	49 0 0
		Braintree			
		Brampton, Cumb.			
		Brandon, Suffolk			
600	10	Brecon (Limited)	10 0 0	10 0 0	20 0 0
129700	Sk.	*Brentford*	All.	7 10 0	
5000	20	Do., A shares	1 0 0		
2500	20	Do., preference	20 0 0	5 0 0	
		Brentwood			
		Bridge, near Cant.			
		Bridge-end G. & W.			
		Bridgenorth (L)			
200	60	*Bridgwater*	60 0 0	8 10 0	80 0 0
520	10	Bridlington (L)	10 0 0	7 10 0	12 10 0
450	10	Bridport	10 0 0	7 10 0	12 0 0
450	10	Do., new shares	7 0 0	5 0 0	8 8 0
6000	5	*Brierly Hill*	5 0 0	4 0 0	5 2 6
		Brighton	20 0 0	7 0 0	17 to 18
675	20	Do., new shares	4 0 0	7 0 0	
5000	20	*Brighton & Hove*	20 0 0	6 10 0	20 10 0
710	20	Do., new shares	20 0 0	6 10 0	20 0 0
		Brimscombe (L)			
204500	Sk.	*Bristol United*	Stock.	10 0 0	185 to 186
300	5	*Briton-ferry*	5 0 0		
150	8	Brixham	8 0 0	5 0 0	
		Broadstairs			
2000	10	*Bromley*, Kent	10 0 0	8 0 0	14 10 0
3000	10	Do., new shares	3 10 0	8 0 0	5 10 0
		Bromsgrove			
100	10	Bromyard (Lim.)	10 0 0		
		Broughton			
120	10	Bruton	10 0 0	4 0 0	8 to 9
		Brymbo			
		Brynmawr			
100	25	Buckingham	25 0 0	6 0 0	26 0 0
		Buntingford (Lim.)			
	5	Burgess Hill & St. John's (L.) £5000			
500	1	Burley-in-Wharfdale (Limited)	1 0 0	5 0 0	1 1 0
		Burnham, Bucks			
		Burnham (L) Essex			
		Burnham, Somers.			
1600	5	*Bursl'm and Tuns.*	5 0 0	10 0 0	9 5 0
3000	5	Do., new shares	5 0 0	7 10 0	7 2 6
1600	5	Do., do.	5 0 0	7 0 0	6 10 0
440	2½	Burton, Westmoreland (Limited)	2 10 0		
	10	*Bury St. Edmnd's*	10 0 0	10 0 0	20 0 0
1800	10	Do., new shares	4 0 0	7 10 0	6 12 6
619	10	Buxton (Limited)	10 0 0	9 0 0	
120	10	Do.	7 10 0	9 0 0	
500	5	Caerleon (Lim.)	4 0 0		
	5	Caerphilly Gas and Water (Limited)			
150	10	Caistor	10 0 0	7 0 0	12 0 0
187	5	Callington	5 0 0		5 0 0
215	10	Calne, Wilts	10 0 0	6 0 0	10 0 0
		Calverley (L) *York.*			
		Camborne			
600	50	*Cambridge*	50 0 0	10 0 0	93 to 95
160	12½	Do., new shares	12 10 0	10 0 0	22 10 0
640	8½	Do., do.	4 0 0	10 0 0	6 0 0
	5	Cambridge Consumers (Limited)	1 10 0		
300	50	Cansfield	50 0 0	10 0 0	92 0 0
240	50	*Canterby. G. & W.*	50 0 0		
240	25	Do., new shares	25 0 0	£6	
240	12½	Do., do.	12 10 0		
240	6¼	Do., do.	6 5 0		
800	25	*Cardiff*, A shares	25 0 0	10 0 0	48 0 0
1200	25	Do., B shares	25 0 0	8 0 0	36 0 0
400	25	Do.	17 10 0	8 0 0	25 0 0
		Cardigan (Limited)			
160	25	Carmarthen	25 0 0	5 0 0	30 0 0
	10	Carmarthen Consumers (Limited)			
		Carnarvon			
	5	Carnforth (Limitd.)			
		Carshalton [£10000			
200	6	Castlecary	6 0 0		5 0 0
200	10	Castle Donnington	10 0 0	6 0 0	12 14 0
249	5	Castleford	5 0 0	5 0 0	5 0 0
400	5	Castletwn, I. of M.	5 0 0	6 0 0	5 14 0
409	5	Do.	5 0 0	5 10 0	5 10 0
	5	Caterham (Lim.)			
620	2	Cawood (Limited)	2 0 0	4 0 0	
	¼	Charing (L) £1000			
720	5	Chatteris	5 0 0	7 10 0	5 15 0
300	10	Cheadle	10 0 0	6 0 0	12 10 0
200	50	Chelmsford	50 0 0	8 0 0	70 0 0
200	25	Do., new shares	25 0 0	8 0 0	35 0 0
2500	16	*Cheltenham*, A sh.	16 0 0	8 0 0	
2500	8	Do., B shares	8 0 0	7 0 0	
		Do., new shares		7 0 0	
500	10	*Chepstow*, A sh.			
200	10	Do., B shares			
600	5	*Chertsey Consumrs*	5 0 0	6 0 0	6 10 0
600	1¼	Do.	1 10 0		
600	2½	Do.	2 10 0	6 0 0	
230	10	Chesham	10 0 0	5 0 0	10 10 0
30000 *l*	Sk.	*Chester United*	Stock.	0 0 0	172 to 174
30000 *l*	,,	Do., preference	,,	17 0 0	129 to 131
535	10	Do., new shares	10 0 0	7 0 0	14 0 0
250	5	Chester-le-Street	5 0 0	6 0 0	5 0 0
11200 *l*	Sk.	*Chesterfield G & W*	100 0 0		100 0 0
8000 *l*	Sk.	Do., guar. stock	100 0 0	5 0 0	100 0 0
400	50	Do., preference	50 0 0	5 0 0	52 0 0
2120	10	Do., do.	10 0 0	5 0 0	10 10 0
580	10	Do., ordinary	10 0 0		10 0 0
		Chesterton (L.)			
		Chichester			
		Chigwl. & Woodfrd. Br. (L.) £10,000			
	5	Chilham Con. (L.)			
		Chippenham			
329	10	Chipping Nort. L.	10 0 0	5 0 0	
100	10	Chipping Ongar	10 0 0	2 10 0	5 0 0
838	20	Chorley	20 0 0	7 0 0	27 0 0
		Chowbent, Lanc.			
		Christchurch			
	5	Chudleigh (Lim.)			
200	5	ChurchStretton (L)	5 0 0		5 0 0
680	10	Cirencester	10 0 0	5 0 0	11 0 0
		Clay Cross		& Bns.	
		Clayton, Allerton, and Thornton			
257	10	*Cleckheaton*, A sh.	10 0 0	7 10 0	
257	10	Do., B shares	10 0 0	7 10 0	
257	10	Do., new shares	10 0 0	7 10 0	
		Cleethorpes			
550	10	*Clevedon* (L.)	10 0 0	7 0 0	11 10 0
		Clitheroe			
1139	5	Cockermouth	5 0 0	6 0 0	6 10 0
300	5	Coggeshall	5 0 0		4½ to 5
900	20	*Colchester*	20 0 0	7 0 0	22½ to 23
		Coleford, Glocester			
		Coleshill (L.) £2000			
160	10	Collingham (Lim.)	10 0 0	5 0 0	10 0 0
		Collumpton			
328	5	Colnbrook, Middsx.	5 0 0	5 0 0	5 0 0
150	20	Colne, Lancashire	20 0 0		36 0 0
150	10	Do., ½ shares	10 0 0		18 0 0
150	5	Do., ¼ shares	5 0 0	£10	9 0 0
150	5	Do., A shares	5 0 0		9 0 0
150	5	Do., B shares	5 0 0		9 0 0
150	5	Do., C shares	2 0 0		5 0 0
1500	10	Colney Hatch	10 0 0	5 0 0	10 10 0
	5	Colyton (Lim.)	2 10 0		
320	5	Conway (Limited)	5 0 0		5 0 0
		Corsham			
		Corwen			
1200	10	Cottenham			
1600	25	*Coventry*	25 0 0	8 0 0	35 0 0
	25	Do., new shares	25 0 0	7 10 0	
400	5	Cowbridge	5 0 0	6 0 0	6 0 0
500	10	Cowes	10 0 0	5 0 0	
		Cradley Heath			
190	10	Cranbrook. £1900	10 0 0	7 10 0	
		Crawley		4 10 0	
		Crayford & Bexley.			
		Crays			
420		Crediton	5 0 0	5 0 0	6 0 0
300	10	Crewkerne	10 0 0	6 0 0	10 0 0
		Crickhowell G. & W.			
		Cricklade (L.) £1000			
200	10	Croft & Hurworth	9 0 0		
1200	1	Crook (Limited)	1 0 0	10 0 0	1 5 0
		Croston (Limited)			
251	5	Crowland	5 0 0	7 0 0	
181	10	Crowle, Lincoln	10 0 0	10 0 0	
8000	5	*Croydon Commrcl.*	5 0 0	7 10 0	7 0 0
		Cuckfield			
	10	Darenth Vale (L.)			
250	20	*Dartford*	20 0 0	7 0 0	27 0 0
700	5	Dartmouth (Lim.)	5 0 0	7 0 0	6 0 0
125	20	Daventry	20 0 0	5 0 0	24 8 0
165	10	Dawley	10 0 0	5 0 0	10 0 0
346	5	Dawlish	5 0 0	8 0 0	7 10 0
1400	10	*Deal & Walmer*	10 0 0	6 10 0	12 0 0
1400	1¼	Do.	1 5 0	4 0 0	1 0 0
350	10	Do.	5 0 0	6 10 0	6 0 0
1200	1	Deddington	1 0 0		
		Dedham (L.) £1000			
		Delph, Yorkshire			
500	6	Denbigh	6 0 0	5 0 0	6 0 0
1800	25	*Derby*	25 0 0	10 0 0	53 0 0
		Dereham			
7000	5	*Devonport*	5 0 0	9 0 0	9 0 0
3000	5	Do., preference	4 0 0	5 0 0	4 0 0
7400	5	*Dewsbury & Batley* A shares	5 0 0	10 0 0	10 2 6
7400	5	Do., B shares	5 0 0	7 10 0	7 15 0
7600	5	Do., C shares	2 10 0	7 10 0	4 15 0
		Diss			
400	5	Dolgelly	5 0 0		
400	2½	Do., new shares	2 10 0		
100	10	Donnington	10 0 0	5 0 0	10 0 0
340	27½	Dorchester	25 0 0	5 0 0	27 10 0
120	25	Dorking	24 0 0	5 0 0	25 0 0
		Donnington, Linc.			
192	25	Douglas, I. of Man	25 0 0	8 0 0	30 0 0
21945 *l*	Sk.	*Dover*	100 0 0	6 0 0	100 0 0
1855	10	Do., new shares	10 0 0	6 0 0	10 0 0

Share List of Provincial Gas Companies.

Continued.

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
500	10	Dowlais (Limited).	10 0 0	8 0 0	12 0 0
25	60	Downham Market.	60 0 0	7 10 0	
	5	Downton (Limited) £2006			
		Driffield			
3000	5	*Drighlington and Gildersome.*	5 0 0	7 10 0	7 15 0
		Droitwich			
1100	20	*Droylsden*	10 0 0	8 0 0	15 0 0
900	30	*Dudley*	30 0 0	10 0 0	38 to 40
485	30	Do., pref. sh.	30 0 0	9 10 0	
800	10	Do., new shares	5 0 0	10 0 0	
1000	20	*Dukinfield*	18 0 0	10 0 0	36 10 0
500	20	Do.	18 0 0	8 0 0	
200	10	Dunmow	10 0 0	5 0 0	10 0 0
		Dunstable			
900	10	Durham	10 0 0	10 0 0	£26
900	10	Do., new shares	5 10 0	10 0 0	
250	10	Dursley, Gloucstr.	9 0 0	6 0 0	9 5 0
150	5	Easingwold	5 0 0	5 0 0	
		East Barnet G. & W.		4 10 0	
400	10	*Eastbourne*	10 0 0	5 0 0	11 0 0
90	20	East Dereham	20 0 0	5 0 0	21 0 0
356	5	East Grinstead	5 0 0	6 0 0	5 0 0
		Easton (Limited)		5 0 0	
1200	5	East Retford	5 0 0	10 0 0	7 10 0
		Eckington & Mosboro' (Limited)			
	10	Edenbdg. (L) £2000			
		Edgware			
		Egremont, Cumb.			
703	6⅔	*Elland*	6 10 0	8 0 0	10 0 0
800	5	Elsecar (Limited).	5 0 0	5 0 0	5 12 0
		Eltham			
200	10	Emsworth			
400	5	*Enfield*	5 0 0	5 0 0	5 0 0
		Epping (Limited)			
300	19	Epsom & Ewell	19 0 0		
		Erith			
325	10	*Eton*	10 0 0	5 0 0	10 0 0
700	10	Evesham (Lim.)	10 0 0	7 0 0	11 to 12
1600	25	*Exeter*	25 0 0	8 0 0	40 to 42
250	10	*Exmouth*	10 0 0	5 0 0	10 0 0
58	25	Eye	25 0 0	5 0 0	25 0 0
170	10	Fairford [£3500	10 0 0	3 0 0	
		Fakenham (Lim.)			
		Falkingham			
10765	1	Falmouth (Lim.)	1 0 0	2 10 0	
6955	Sk.	*Fareham*	100 0 0	6 0 0	110 0 0
256	25	Farnham	25 0 0	7 0 0	35 0 0
		Farnworth & Kears.			
		Farringdon			
140	50	Faversham	50 0 0	10 0 0	66 0 0
		Fazeley (L.) £3000			
120	10	Fenny Stratford (L)	10 0 0	5 0 0	11 0 0
	5	Filey	5 0 0	5 0 0	5 0 0
	5	Finedon (L.) £2000			
		Fleetwood			
3600	10	*Folkestone*	10 0 0	7 10 0	15 0 0
280	5	Framlingham	5 0 0	5 0 0	5 10 0
1155	1	Frodsham (Lim.)	1 0 0	7 10 0	1 1 0
480	25	*Frome*	25 0 0	10 0 0	35 0 0
		Furness G. and W.			
12000	Sk.	*Gainsborough*	All	6 13 4	120 to 123
400	20	Do., new shares	9 0 0	6 13 4	10 0 0
170	10	Gillingham (Lim.) Dorset	10 0 0	3 0 0	
103	25	Glastonbury	25 0 0	4 0 0	15 0 0
600	10	*Glossop*	10 0 0	9 0 0	16 0 0
600	5	Do.	5 0 0	9 0 0	8 0 0
1800	10	Do., new shares.	6 10 0	7 10 0	8 10 0
1000	25	*Gloucester*, A sh.	25 0 0	10 0 0	42 0 0
856	25	Do., B shares.	21 15 0	7 10 0	28 0 0
260	20	Godalming	20 0 0	5 0 0	20 0 0
300	5	Do., new shares.	5 0 0	5 0 0	5 0 0
100	20	Do., do.	8 0 0		
100	5	Do., do.	2 0 0		
	5	Golborne (L) £5000			
621	5	*Gomersal*	5 0 0	6 0 0	6 7 6
		Gorleston & Sthdn.			
855	25	*Gosport*	25 0 0	8 0 0	35 0 0
	5	Goudhurst (Lim.)			
		Grange & Cartmel District			
450	20	Grantham	20 0 0	7 0 0	28 0 0
1000	20	*Gravesend*	20 0 0	5 0 0	21 0 0
		Grays Thurrock			
643	5	Gt. Berkhampstd.	5 0 0	6 0 0	5 10 0
1000	10	*Great Grimsby*	10 0 0	10 0 0	17 0 0
1000	6⅔	Do., new shares.	4 10 0	10 0 0	8 2 6
700	5	Great Harwood	5 0 0	4 5 0	
280	5	Do., new shares.	1 0 0		
210	10	Great Marlow	10 0 0	5 0 0	10 0 0
		Great Stanmore			
		Great Torrington			
450	5	Great Wigston	5 0 0	6 0 0	
150	1	Do., new shares.	1 0 0	6 0 0	
	5	Greenhithe (Lim.)			
1300	10	Guernsey	9 0 0	10 0 0	17 0 0
352	25	*Guildford*, A sh.	25 0 0		
352	3	Do., B shares.	3 0 0		
		Do., new shares.			
25	100	Guisborough	60 0 0	10 0 0	
	44/5	Haddenham (Lim.)			
		Hadleigh Cons. (L)			
240	5	Hadlow (Limited).	5 0 0		
140	10	Hailsham	10 0 0	6 0 0	10 0 0
40	50	Halesowen	50 0 0	6 0 0	
300	5	Halesworth	5 0 0	7 10 0	6 5 0
240	5	Haltwhistle (Lim.)	5 0 0	4 10 0	5 0 0
		Hampton Court			
580	5	Harrington	4 0 0	6 0 0	
450	10	*Harrogate*	2 0 0	7 10 0	4 10 0
				9 10 0	186 5 0
13333⅓	Sk.	Do., A stock.		7 10 0	146 5 0
9000	Sk.	Do., B stock.			
450	10	Do., new shares.	2 0 0	7 10 0	4 10 0
6800	5	*Hartlepool G. & W.*	5 0 0	6 0 0	6 0 0
13200	5	Do., new shares.	5 0 0	6 0 0	6 0 0
6597	5	Do., do.	2 10 0	6 0 0	2 18 0
1000	1	Hartley Wintney, Harwich	1 0 0	2 10 0	21s. to 23s.
300	5	Haslemere			
662	6	*Haslingden*	6 0 0	10 0 0	10 0 0
343	6	Do., A shares.	4 0 0	10 0 0	6 0 0
1650	25	*Hastings and St. Leonards*	25 0 0	8 0 0	
1500	20	Do.	12 0 0	7 0 0	
	1	Haswell Gas and Water (Limited)			
180	10	Hatfield			
	5	Hathrigh (L) £2000			
		Harlow and Sawbridgeworth			
500	5	Havant	5 0 0	3 0 0	5 0 0
120	10	Haverhill	10 0 0	5 0 0	10 0 0
840	5	Hawick	5 0 0	10 0 0	10 0 0
	5	Hawkhurst (Lim.)			
244	5	Haworth	5 0 0		5 5 0
		Hay (L.), Brecon			
		Haydon Bridge			
8500	1	Hebden Bridge	1 0 0	10 0 0	1 12 6
170	10	Heckington (Lim.)	10 0 0		10 0 0
		Heckmondwike			
120	10	Hedon (Limited)	10 0 0	3 0 0	
145	12	Helston	12 0 0	9 0 0	
250	10	Hemel Hempstead	10 0 0	4 0 0	7 0 0
500	10	Henley (Limited)	10 0 0	5 0 0	10 0 0
		Hereford. £10,000		4 10 0	
300	10	Herne Bay	10 0 0	6 0 0	11 0 0
1300	10	*Hertford*	8 0 0	7 10 0	12 0 0
		Hessle (L.) £1500			
270	10	Hexham	10 0 0	8 0 0	15 0 0
160	£10	Higham Ferrers	10 0 0	7 0 0	12 0 0
		Highworth, Wilts.			
520	5	High Wycombe	5 0 0	6 0 0	6 16 0
300	10	Hinckley	10 0 0	7 10 0	10 0 0
600	5	Hindley, Lancash.	3 0 0		3 0 0
200	20	Hitchin	20 0 0	8 0 0	
200	5	Do., new shares.	5 0 0	8 0 0	
880	5	Hoddesden	5 0 0	7 0 0	6 0 0
	5	Hogsthpe (L) £1000			
		Holbeach. [£2000			
	5	Hollingbourne (L)			
600	20	*Holmfirth*	19 0 0	6 10 0	21 10 0
960	5	Holyhead	5 0 0	6 0 0	6 2 6
		Holywell (*see* Brit. Prov.)			
98	25	Honiton	25 0 0	3 12 0	20 0 0
1250	1	Honley (Limited)	1 0 0	5 0 0	1 0 0
6	500	Horncastle	£500		
	5	Hornchurch (Lim.)			
		Hornsey (Lim.)			
1200	2½	Horsforth	2 10 0		2 10 0
303	20	Horsham	20 0 0	10 0 0	26 0 0
	10	Houghton-le-Sprg.	10 0 0	8 10 0	27 to 30
		Howden			
1700	20	*Huddersfield*	20 0 0	10 0 0	37 5 0
250	20	Do., new shares.	15 0 0	10 0 0	
		Hull			
		Hull-Sculcoates (*see* B. Prov.)			
210	10	Hungerford	10 0 0	5 0 0	10 0 0
1200	10	*Huntingdon*	10 0 0	8 0 0	16 10 0
		Hurstpierpoint			
600	10	*Huyton & Roby*	10 0 0	5 0 0	12 10 0
300	10	Do., new shares	9 0 0	5 0 0	11 10 0
2500	10	*Hyde*	9 0 0	5 10 0	10 15 0
	5	Hythe (L.) £2000			
400	10	*Hythe and Sandgate*	10 0 0	6 0 0	10 15 0
		Idle & Eccleshill (*see* Airdale)			
		Ilford			
198	12	Ilfracombe	2 0 0	4 0 0	8 to 9
560	6⅔	Ilkestone	6 5 0	11 4 0	8 0 0
		Ilkley			
		Ilminster			
250	5	Ingatestone (Lim.)	5 0 0	1 10 0	
2800	10	*Ipswich*	10 0 0	10 0 0	17 0 0
1400	10	Do.	10 0 0	7 10 0	15 0 0
200	10	Do.	7 10 0		
		Ironbridge			
180	10	Irthlingborough	10 0 0	7 0 0	10 0 0
800	30	*Isle of Thanet* (Margate & Ramsgate.)	30 0 0	10 0 0	60 0 0
		Jersey, St. Helier's			
		Kegworth			
363	5	Kelvedon (Lim.)	5 0 0		
1842	10	*Kendal United Gas and Water*	10 0 0	10 0 0	19 10 0
		Do., preference.	20 0 0	7 10 0	33 0 0
380	20	Kenilworth (Lim.)	10 0 0	4 0 0	10 0 0
290	10	Keswick	5 0 0	6 0 0	4 0 0
400	5	Kettering	25 0 0	5 0 0	30 0 0
228	25	Ketton (L.) Rutld.		7 0 0	
	5	Keymer and Ditchling (Limited)			
		Keynsham			
500	5	Kibworth	5 0 0	6 0 0	7 0 0
		Kidderminster		5 0 0	
800	5	Kidsgrove	5 0 0	12 0 0	7 10 0
150	10	Kimbolton	10 0 0	7 0 0	12 0 0
140	7	Kingsbridge	7 0 0		10 to 11
		Kingsclare			
270	5	King's Cliffe	5 0 0	5 10 0	5 0 0
		Kingstn-on-Thame.			
		Kingswinford District (Limited)			
		Kington, Hereford			
400	5	Kinver, Staffordsh.	5 0 0		5 0 0
	1	Kippax (Limited)			
		Kirby Lonsdale			
		Kirkburton			
400	5	Kirkby Stephen (L)	5 0 0		
330	5	Kirkham, Lanc.	5 0 0	4 0 0	5 0 0
330	2½	Do., new shares.	2 10 0	4 0 0	2 10 0
	5	Kirkhampton, Dalton, and Lepton (Limited) £5000			
200	10	Kirton-in-Lindsey	10 0 0	5 0 0	10 10 0
200	5	Knighton (L.)	5 0 0		
1000	10	*Knottingley*			
670	5	Knutsford Gas and Water (Limited)	5 0 0	10 0 0	7 7 6
319	3	Do.	3 0 0	10 0 0	3 10 0
	5	Lamborne (L) £1200			
		Lamptr., Llandssl., Tregrn. & Abers.			
30000	Sk.	*Lancaster*	All.	8 0 0	150 to 152
	5	Langley Mill and Heanor (Lim.)			
50	25	Langport	5 0 0	4 0 0	15 0 0
		Launceston			
		Lea Bridge (*see* County & Gen)			
1500	20	*Leamington Priors*	20 0 0	8 0 0	28 0 0
1500	20	Do., new shares.	11 0 0	7 0 0	13 10 0
213	10	Leatherhead	10 0 0	5 0 0	10 0 0
		Ledbury			
		Leeds Company—			
190200	Sk.	Consolidated stk.	£100	6 0 0	115 0 0
6790	5	Do., new	2 0 0	6 0 0	2 15 0
192500	Sk.	*Leeds New Company*	£100	6 0 0	123 to 126
6500	5	Do., B shares.	5 0 0	6 0 0	6¼ to 6¾
		Leeswood (Lim.)			
3900	13	*Leicester*	13 0 0	10 0 0	23 0 0
5000	10	Do., new shares.	10 0 0	7 10 0	15 0 0
		Leigh £2000		7 0 0	
476½	21	Leighton Buzzard.	21 0 0	8 0 0	30 0 0
500	10	Leominster	10 0 0	7 0 0	12 0 0
330	25	Lewes, A shares.	25 0 0	8 0 0	31 5 0
644	5	Do., B shares.	5 0 0		6 5 0
245	5	Leyburn, Yorksh.	5 0 0		6 0 0
		Leyland, Lancash.			
250	20	Lichfield	20 0 0	10 0 0	40 0 0
320	25	*Lincoln*	25 0 0	10 0 0	70 0 0
300	5	Lindfield (Limited)	5 0 0	8 0 0	5 0 0
240	5	Liskeard	5 0 0	7 10 0	6 0 0
		Littleborough			
240	5	Littlehampton	5 0 0	10 0 0	5 0 0
	5	Littleport (Limited) £2000			
	Sk.	*Liverpool United*	£100	10 0 0	208 0 0
	25	Do.	5 0 0	7 0 0	5 12 6
259	5	Llandovery (Lim.)	1 10 0	7 0 0	
1375	10	Llandudno Gas and Water (Lim.)	10 0 0	7 0 0	11 0 0
		Llanelly £3000			
		Llanfyllin (L) £2000			
		Llangollen			
250	10	Llanrwst (Limited)	9 15 0	5 0 0	9 15 0
	5	Llantrisst. (L) £2000			
	10	*Llynvi Valley*			
272	5	Loddon	5 0 0	3 0 0	5 0 0
		Long Buckby (L.)			
	5	Longrdg. L. £10,000			
120	10	Long Sutton (Lim.)	10 0 0	7 10 0	11 to 12
2000	10	*Longton*	10 0 0	6 0 0	14 0 0
1000	10	Do., new shares.	2 0 0	6 0 0	2 5 0
		Longwood, near Huddersfield.			
250	5	Lostwithiel	5 0 0	4 0 0	6 0 0
250	1	Do., new shares.	1 0 0	5 0 0	1 10 0
1422	6	*Loughborough*	6 0 0	10 0 0	11 15 0
240	25	*Louth*	25 0 0	10 0 0	40 0 0
2500	10	*Lowestoft G. & W.*			
611	5	Ludlow Union	5 0 0	5 0 0	5 0 0
250	5	Do., pref. shares	5 0 0	5 0 0	
640	10	*Luton*	10 0 0	7 10 0 & Bns.	12 0 0
640	5	Do., preferential	5 0 0	4 0 0 & Bns.	5 0 0
640	5	Do., new shares.	5 0 0	7 10 0 & Bns.	6 0 0
100	20	Lutterworth	20 0 0	6 5 0	25 0 0
	5	Lydd (Lim.) £2000			
		Lydney (L.) £3000			
63	20	Lyme Regis	20 0 0	4 0 0	20 0 0
120	25	Lymington	25 0 0	5 0 0	25 0 0
400	10	Lymm	9 0 0	6 0 0	10 0 0
300	10	Maidenhead	10 0 0	5 0 0	10 0 0
500	25	*Maidstone*, A sh.	25 0 0	10 0 0	45 0 0
500	25	Do., B shares.	25 0 0	4 0 0	20 0 0
	25	Do., new shares.	25 0 0	7 10 0	
204	23	Maldon	23 0 0	7 0 0	27 0 0
200	10	Malmesbury	10 0 0	2 10 0	5 15 0
		Malpas (Limited)			
825	10	Malton	10 0 0		
793	7	Do.	7 0 0		
		Malvern Link			
		Manningtree			
		Mansfield £5000		10 0 0	
150	10	Mansfield Woodhse	10 0 0		
		March			
		Margate (*see* I. of Thanet)			
	10	Market Deeping (Limited)			
		Market Drayton			
132	25	Market Harboro'	25 0 0	7 0 0	35 0 0
		Market Weighton			
		Markyate St. (L.)			
		Marlborough			
150	10	Marsden (Lim.)	10 0 0	5 0 0	10 0 0
	5	Marlock (L.) £2000			
671	14	*Maryport Town & Harbour*	14 0 0	10s. p. sh.	6 12 6
600	5	Matlock (Lim)	5 0 0	6 0 0	
508	5	Matlock Bridge, Matlock Bank, & Matlk. Town (L.)	5 0 0	6 0 0	
200	2	Measham (Lim.)	1 12 6	5 0 0	
220	10	Melbourne	10 0 0	6 0 0	12 0 0
		Melksham			
934	2	Meltham	2 0 0	4 10 0	
		Melton Mowbray			
50	10	Mere	10 0 0		
330	35	*Merthyr Tydvil*	35 0 0	10 0 0	50 0 0
8300	Sk.	Do.	All.	5 0 0	100 0 0
120	10	Middleham	1 0 0	5 0 0	10 0 0
		Middleton-in-Teesd.			
400	5	Midhurst (Lim.)	5 0 0	2 10 0	5 0 0

Share List of Provincial Gas Companies.

Continued.

No. of Shares issued	Amount per share.	Name of Company.	Amount paid up per Share	Div. per Cent. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
198	5	Midsmmr. Norton.	5 0 0	5 0 0	
513	10	Mildenhall . . .	10 0 0	5 0 0	
300	5	*Milnrow* (Limited)	4 10 0	3 6 8	
184	10	Milnthrpe(L)£1500	10 0 0	5 0 0	10 0 0
2000	5	Milverton (Lim.) .	5 0 0	5 0 0	6 5 0
3033	10	*Mirfield* . . .	10 0 0		
3033	10	*Mitcham & Wimb.*	10 0 0		
650	5	Do., new shares.	5 0 0		
700	10	*Mold Gas & Water*	5 0 0	7 10 0	6½ to 6¾
250	5	Monmouth G. & W.	10 0 0	5 0 0	10 0 0
800	5	Montgomery (L.).	5 0 0		
	5	Morecambe (Lim).	5 0 0	5 0 0	6 0 0
	5	Moretonhampstead (Limited) . . .			
150	10	Moreton-in-Marsh	9 2 6	4 0 6	9 2 6
1000	5	*Morley*, nr. Leeds.	5 0 0	10 0 0	8 10 0
1000	2	Do.	2 0 0	10 0 0	3 8 0
220	16	Morpeth	16 0 0	5 0 0	17 10 0
		Mossley			
		Mottram			
	2	Narbrth (L.) £2000			
		Nayland			
		Neath			
		Neath New . . .			
185	10	Needham Market .	10 0 0	4 0 0	
		Nethrthng(L.)£700			
		Newark		10 0 0	
		Newburn			
250	20	Newbury	20 0 0	5 0 0	20 0 0
160000	100	*Newcastle & Gatshd.* A shares.	100 0 0	10 0 0	164 0 0
40000	100	Do., B shares.	100 0 0	3 10 0	55 0 0
50000	100	Do., C shares	100 0 0	7 0 0	110 0 0
		Newcastle-n.-Lyne			
250	5	Newent	5 0 0		
		Newhaven, Sussex			
		New Malton . . .			
600	5	Newmarket. . . .	5 0 0	4 0 0	4 0 0
368	2	Do., preference.	2 0 0	6 0 0	2 0 0
		New Mill(L.) £7000			
200	20	*N. Mills & Hayfield*	20 0 0	7 10 0	
70	20	Newnham (Lim.).	20 0 0	10 0 0	37 10 0
	5	Newport, Essex, (L.) . . . £2000			
		Newport Pagnell .			
366	35	*Newport, M.*, A sh.	35 0 0	2 0 0	50 0 0
540	35	Do., B shares.	35 0 0	7 10 0	42 10 0
		Newport, Salop . .			
250	5	New Romney (Ld.)	5 0 0	5 0 0	5 0 0
		Newton Abbott . .			
198	10	Newtown, Mont.	10 0 0	6 0 0	10 0 0
		Northallerton. . .			
777	20	*Northmptn.*, A sh.	20 0 0	10 0 0	36 0 0
777	20	Do., B shares.	20 0 0	4 0 0	14 0 0
777	20	Do., new shares.	20 0 0	7 10 0	28 0 0
2331	5¾	Do.	5 13 4	7 10 0	7 10 0
		North Bierley . .			
		Nrthflt.(*see* C. & G)			
		Northleach . . .			
605	5	North Ormesby (L)	5 0 0	6 0 0	
120	10½	North Walsham .	10 10 0	5 0 0	10 15 0
371	15	Northwich	15 0 0	5 0 0	15 0 0
		Norwich(*see* B. P)			
4600	50	*Nottingham* . . .	50 0 0	5 10 0	60 0 0
	50	Do., new shares.	50 0 0	5 10 0	63 0 0
268	8	Nuneaton (Lim.).	8 0 0	5 0 0	7 10 0
125	8	Do., new shares.	8 0 0	5 0 0	7 10 0
		Oaken Gates, Salop			
240	5	Oakhampton(Lim.)	5 0 0		
200	10	Odiham	10 0 0	6 0 0	10 10 0
320	5	Old Goole (Lim.) .	5 0 0	6 0 0	5 0 0
		Olney			
360	10	*Ormskirk*, old sh.	10 0 0	8 0 0	14 0 0
1080	10	Do., new shares.	4 10 0	8 0 0	6 4 6
2400	5	*Ossett & Horbury.*	5 0 0	10 0 0	10 0 0
600	5	Do., new shares.	2 0 0	10 0 0	5 5 0
		Oswestry			
		Otley, Yorkshire .			
80	25	Oundle.	25 0 0	7 0 0	25 0 0
600	15	*Over Darwen*, orig.	15 0 0	5 0 0	19 0 0
600	15	Do., A shares.	15 0 0	5 0 0	19 0 0
1200	15	Do., B shares.	7 10 0	5 0 0	10 0
1694	1	Over & Whrtn. (L)	1 0 0		1 2 0
320	5	Owston Ferry (L.)	5 0 0	5 0 0	5 0 0
720	25	*Oxford*	25 0 0	9 10 0	50 0 0
240	25	Do., B shares .	25 0 0	5 0 0	25 0 0
1527	5	Padiham	5 0 0	6 0 0	6 0 0
338	2½	Painswick	2 10 0		2 10 0
		Pangbourne (L) . .			
		Pately Br., Yorksh.			
300	5	Peel, Isle of Man .	5 0 0	7 0 0	6 to 7
		Pembroke (*see* Co. and General) . .			
500	20	*Peniston*			
250	20	Penrith	15 0 0	6 10 0	21 0 0
153	20	Penzance.	20 0 0		15 0 0
		Pershore			
3900	10	*Peterborough* . .			
320	5	Petersfield	5 0 0	5 0 0	
308	10	Petworth	10 0 0	9 17 6	15 0 0
1250	2	Pewsey (Limited) .	2 0 0	6 0 0	2 0 0
		Pickering			
2500	10	*Plymouth & Stnh.*	10 0 0	10 0 0	19 0 0
2500	10	Do., new shares.	10 0 0	7 10 0	14 0 0
2509	10	Do., new shares.	3 0 0	7 10 0	4 10 0
160	10	Pocklington . . .	10 0 0		5 0 0
		Ponder's End & Enfield Highway (L.)			
		Pontefract			
		Pontypridd		4 0 0	
400	10	Poole	10 0 0	10 0 0	15 0 0
344	2	Do., new shares.	2 0 0	10 0 0	3 0 0
	10	Porth Cawl (Lim.)			
643	5	Port Madoc (Lim.)	5 0 0	5 0 0	
		Port Talbot			
500	10	Portishead	10 0 0	2 0 0	10 0 0
600	53	*Portsea Island* . .	53 0 0	8 0 0	60 0 0
600	50	Do., new shares.	50 0 0	8 0 0	57 0 0
600	50	Do., new shares.	49 0 0	8 0 0	56 0 0
9000	Sk.	Do.		5 0 0	92 0 0
120	10	Potton, Bedfordsh.	10 0 0	5 0 0	10 0 0
400	10	*Prescot*	10 0 0	5 0 0	

No. of Shares issued	Amount per share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
120000	Sk.	Presteign	All.	10 0 0	210 0 0
12000	,,	*Preston*	All.	7 0 0	140 0 0
	5	Do.			
		Prittlewell(L)£2000			
1000	10	Provincial (Hull) .	8 0 0		8 0 0
600	20	*Pudsey*	20 0 0	10 0 0	35 0 0
600	6	Do., new shares.	6 13 4	10 0 0	11 13 4
600	20	Do.	20 0 0	7 0 0	26 0 0
600	6⅔	Do.	6 13 4	7 0 0	8 13 4
600	20	Do.	2 0 0	7 0 0	3 10 0
600	6⅔	Do.	6 13 4	7 0 0	1 3 4
93	20	Pwllheli . . (*sorrel*	20 0 0	2 10 0	25 0 0
600	5	Quorndon & Mountsorrel	5 0 0	7 0 0	12 0 0
900	10	*Radcliff & Pilkington*, No. 1 . . .	10 0 0		
2100	10	Do., No. 2 . . .	6 0 0		
200	20	Ramsay, I. of Man.	20 0 0	10 0 0	33 10 0
		Ramsey, Hunts . .			
		Ramsgate (*see* I. of *Rastrick* [Thanet)			
		Rawmarsh			
20000	Sk.	*Reading*	100 0 0	8 0 0	142 0 0
5000	Sk.	Do.	100 0 0	5 0 0	102 0 0
1000	10	Do.	10 0 0	7 0 0	13 0 0
500	10	Do., preference.	10 0 0	5 0 0	10 10 0
		Redbourn(L) £1100			
400	5	Redcar	5 0 0	4 0 0	5 0 0
1200	5	*Redhill*	5 0 0	7 0 0	6 0 0
		Redruth			
		Reigate			
1200	1	Repton (Limited) .	1 0 0	5 0 0	1 1 0
2000	10	*Richmond*, Sry.(L)	10 0 0	7 0 0	15 0 0
		Risca & Pontymstr.			
600	5	Rhosllanerchrugog Rhymney (Lim.)	3 0 0	7 10 0	4 13 0
400	5	Rickmansworth. .	5 0 0		5 0 0
180	10	Ringwood	10 0 0	5 0 0	10 0 0
		Ripley			
		Risborough . . .			
	5	Robertsbridge (L.)			
		Robin Hood's Bay			
280	50	*Rochester & Chatham*		6 0 0	
		Rochford. . [Rochford			
2600	5	Romford	5 0 0	6 0 0	5 5 0
220	10	Romsey	10 0 0	7 10 0	12 10 0
3093	10	Rossendale Union.	10 0 0	10 0 0	17 2 6
600	10	Do.. Preference .	10 0 0	10 0 0	17 2 6
2507	10	Do , New issue .	6 0 0	10 0 0	11 12 6
1503	10	Do., Second issue	10 0 0	7 0 0	12 10 0
7500	Sk.	*Rotherham.*, A stock	100 0 0	10 0 0	186 to 190
2500	Sk.	Do., B stock.	100 0 0	8 0 0	152 to 154
600	20⅔	Do., new shares.	10 0 0	8 0 0	14¼ to 15
		Rothwell			
		Rowley Regis and Blacheath £4000			
350	10	Royston	10 0 0	5 0 0	9 10 0
500	5	Ruabon.	5 0 0	1 10 0	4 0 0
150	20	Rugby	20 0 0	10 0 0	
150	5	Do., ¼ shares.	5 0 0	10 0 0	
150	6⅔	Do., ⅓ shares.	6 13 4	10 0 0	
150	10	Do., new shares.	10 0 0	10 0 0	
150	2½	Do., do. . .	2 10 0	10 0 0	
150	3⅓	Do., do. . .	3 6 8	10 0 0	
430	10	Rugely.	10 0 0	5 0 0	10 10 0
2400	5	*Runcorn.*	5 0 0	8 0 0	
2400	5	Do., new shares.	3 5 0	5 0 0	
114	31½	Ruthin.	31 5 0	6 16 0	40 0 0
1500	12½	*Ryde*	12 10 0	8 0 0	15 0 0
500	5	Rye	5 0 0	6 0 0	6 0 0
		Saddleworth . . .			
225	20	Saffron Walden. .	20 0 0	5 0 0	20 0 0
225	20	Do.	10 0 0		
1400	5	St. Alban's Gas & Water (Lim.). .	5 0 0	5 0 0	5 5 0
320	5	St. Asaph (Lim.).	5 0 0		
		St. Austell			
		St. Bees (Lim.) .			
		St. Colomb			
4600	10	*St. Helen's.* . . .	10 0 0	10 0 0	20 0 0
1500	10	Do.	8 0 0		
		St. Ives, Cornwall.			
		St. Mary's Cray. .			
320	5	Salcombe	5 0 0		
880	12½	*Salisbury*	12 10 0	10 0 0	17 10 0
160	12½	Do., preference .	12 10 0	6 0 0	15 0 0
160	12½	Do., new shares	12 10 0	8 0 0	16 0 0
341	10	Sandbach.	10 0 0	5 0 0	12 10 0
		Sandown (Lim.) .			
381	10	Sandwich	10 0 0	5 0 0	
	5	Sandy, Beds . . .			
	5	Sawston (L.) £2000			
100	10	Saxmundham . .	10 0 0	5 0 0	
2000	10	*Scarborough* . . .	10 0 0	7 0 0	13 0 0
1000	10	Do.	6 0 0	7 0 0	12 2 6
240	5	Sedburgh.	5 0 0		
300	16	Selby	16 0 0	7 10 0	
140	5	Settle (Limited). .	3 10 0	5 0 0	
290	10	Sevenoaks	10 0 0	4 0 0	10 0 0
400	10	Shaftesbury(Lim.).	10 0 0	6 0 0	10 0 0
565	5	Sheepshed (Lim.).	5 0 0	6 0 0	6 0 0
135000	Sk.	*Sheffield United*, A stock.	100 0 0	10 0 0	199 to 200
129984	Sk.	Do., B stock.	100 0 0	10 0 0	197 to 198
2329	30	Do., C shares.	20 0 0	10 0 0	45¾ to 47¼
310	15	Do.	10 0 0	10 0 0	
533	6	Do.	4 0 0	10 0 0	
297	3	Do.	2 0 0	10 0 0	
307	1¼	Do.	1 0 0	10 0 0	
600	5	Shefford (Limited)	4 0 0		
		Shelton, Potteries (*see* Brit. Prov.)			
2900	5	Sheppy, Sheerness	5 0 0	10 0 0	7 0 0
800	5	Do., pref. sh.	5 0 0	4 0 0	5 0 0
400	5	Do., A shares.	4 0 0	10 0 0	6 0 0
350	10	Shepton Mallet . .	10 0 0	7 10 0	10 0 0
120	10	Shepton - under - Wychwood (L.).			
1500	5	Sherborne	5 0 0	6 0 0	6 0 0
		Shiffnal, Salop . .			
1000	5	*Shipley*	5 0 0	6 0 0	7 10 0
150	10	Shipston-on-Stour	10 0 0	4 0 0	

No. of Shares issued	Amount per share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
		Shirley & Freemantle, Hants . .			
240	25	*Shotley Bridge* . .	25 0 0	7 0 0	26½ to 27
240	10	Do., new shares.	10 0 0	7 0 0	
1000	10	*Shrewsbury*, A sh.	10 0 0	10 0 0	20 0 0
1000	10	Do., B shares.	10 0 0	5 0 0	10 0 0
1000	10	Do., new shares.	10 0 0	7 10 0	15 0 0
		Sible Hedingham .			
	5	Sidmouth (L)£4000			
7000	Sk.	*Skipton*	100 0 0	9 0 0	150 0 0
400	2½	Do., new shares.	2 10 0	5 0 0	3 0 0
		Slaithwaite . . .			
600	10	Sleaford	10 0 0	5 0 0	12 12 6
230	10	*Slough*	10 0 0		
340	5	Snaith	5 0 0		4 0 0
		Soham			
	5	Somersham(L)£1500			
150	10	Somerton.	10 0 0		
354	5	Southam	5 0 0		
1000	50	*Southampton* . . .	50 0 0	10 0 0	
668	5	S. Bank & Nor. (L) Southborough . . Southend, Essex . .	5 0 0	5 0 0	5 0 0
		Southgate & Colney Hatch . . .			
220	10	South Molton. . .	10 0 0	5 10 0	7 10 0
		South Petherton(L)			
2000	10	*South Shields.* . .	10 0 0	9 0 0	15 to 17
248	10	Southwell (Lim.).	10 0 0	5 0 0	11 to 11½
300	5	Southwold	5 0 0	5 0 0	5 0 0
1470	1	Spennymoor(Lim.)	1 0 0		
400	5	Spilsby	5 0 0		
		Spittal, Berwick-on-Tweed. . . .			
2000	6⅔	*Stafford*	6 13 4	10 0 0	11 0 0
2000	6⅔	Do., new shares.	5 0 0	8 0 0	6 0 0
178	5	Staindrop	5 0 0	6 0 0	5 0 0
248	23	Staines & Egham .	25 0 0	6 0 0	26 to 27
		Staithes . . £1500			
		Staley Bridge . . .		10 0 0	
225	50	*Stamford & St. Martin's*	50 0 0	9 0 0	75 0 0
	5	Staplehurst (Lim.) £2000.			
150	10	Staveley (Limited)	10 0 0	5 0 0	11 10 0
300	5	Stevenage	5 0 0	5 0 0	5 0 0
2500	10	*Stoke, Fenton &*	10 0 0	10 0 0	
500	10	Do., *[Longton*	2 0 0	10 0 0	
400	5	Stone, Stafford .	5 0 0	5 0 0	6 0 0
220	10	Stoney Stratford .	10 0 0	4 10 0	9 0 0
		Storrngtn(L) £1000			
		Stourbridge, £5000			
1100	1	Stow-on-the-Wold	1 0 0	5 0 0	1 0 0
150	20	*Stratford-on-Avon*	20 0 0	10 0 0	40 0 0
150	5	Do., new shares.	5 0 0	10 0 0	10 0 0
375	8	Do., preference .	8 0 0	5 10 0	8 10 0
750	5	*Stretford*	5 0 0	9 0 0	5 0 0
		Stroud			
261	20	Sudbury	20 0 0	6 10 0	21 10 0
		Sunbury (L), Mid.			
90800	Sk.	*Sunderland* . . .	100 0 0	9 10 0	180 0 0
20000	Sk.	Do., new	100 0 0	8 10 0	160 0 0
200	10	Sutton Coldfield(L)	10 0 0		10 0 0
500	10	Sutton-in-Ashfield	10 0 0	8 0 0	15 0 0
600	5	Sutton & Hooton G. & W. (Lim) .			
		Sutton Southcoates & Drypool, Hull	20 0 0		23 to 24
		Sutton, Surrey . .			
		Sutton Valence . .			
600	5	Swadlincote . . .	5 0 0	5 0 0	6 0 0
109	10	Swaffham	10 0 0	5 0 0	7 0 0
	5	Swanage (L.) £2500			
240	25	*Swansea*	25 0 0	10 0 0	50 0 0
2170	25	Do., new shares.	25 0 0	7 10 0	34 10 0
		Swindon			
		Swindon New (L.)			
200	10	Swineshead (Lim.)	10 0 0	5 0 0	10 5 0
1000	5	Swinton & Mex-	5 0 0	7 0 0	7 0 0
180	10	Syston . . . [boro'	10 0 0		10 0 0
276	5	Tadcaster	5 0 0	5 0 0	3 0 0
		Tamworth			
		Taporley (Lim.) .			
		Tattershall & Coningsby (Lim.) .			
2800	5	*Taunton*	5 0 0	7 0 0	6 15 3
2800	5	Do., new shares.	4 10 0		5 0 0
800	5	Tavistock	3 3 9	12 0 0	6 0 0
200	5	Tenbury Union .	5 0 0	5 0 0	5¼ to 6
150	10	Tenterden	10 0 0	4 0 0	8 0 0
200	10	Tetbury, Gloster .	9 0 0	10 0 0	16 0 0
		Tewkesbury . . .			
200	10	Thame	10 0 0	5 0 0	10 0 0
250	10	Thetford	10 0 0	6 0 0	10 to 11
150	10	Thornbury (Lim.)	10 0 0	4 0 0	
80	1	Do., new shares.	1 0 0	4 0 0	
356	5	Thorne.	5 0 0		4 0 0
160	10	Thrapston (Lim.).	10 0 0	5 0 0	10 0 0
	5	Ticehurst Cons.(L) Tideswell (L) £2000			
1885	5	Todmorden (Lim.)	5 0 0	7 10 0	7 10 0
1870	5	Do., B shares.	3 0 0	7 10 0	4 10 0
600	2½	Topsham (Lim.) .	2 10 0	5 0 0	
		Torpoint (Lim.) .			
		Torquay			
		Torrington, Devon			
		Totnes			
		Totnes Consumers			
5000	5	*Tottenham & Ed.*	5 0 0	8 0 0	6 0 0
150	10	Towcester	10 0 0	5 0 0	10 0 0
		Town-Malling . .			
300	5	Towyn(L) Merion.	5 0 0		5 0 0
275	10	Tring	10 0 0	5 0 0	10 0 0
		Trwbdge. (*see* B.P)			
320	25	Truro	25 0 0	10 0 0	
320	5	Do., new	5 0 0	10 0 0	
		Tunbridge			
2000	10	*Tunbridge Wells* .	10 0 0	10 0 0	19 0 0
	5	Turvey (Limited) .			
100	10	Tuxford	10 0 0	5 0 0	12 0 0

Share List of Provincial Gas Companies.

Continued.

No. of Shares issued.	Amount per Share	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
34570	£ Sk.	Twyford (Limited)			
		Tynemouth	All.	10 0 0	130 0
		Ulverston			
		Uppingham			
240	5	Upton-on-Severn	5 0 0	5 0 0	5 0 0
	5	Upwell & Outwell (L.) £2500			
400	5	Usk (Limited)	5 0 0	10 0 0	9 0 0
300	10	Uttoxeter	10 0 0	5 0 0	12 10 0
		Uxbridge & Hill.			
1500	20	*Ventnor*	10 0 0	6 0 0	10 0 0
160	10	Wainfleet (Lim.)	10 0 0		8 0 0
1000	25	*Wakefield*	25 0 0	10 0 0	44 0 0
3660	5	Do.	5 0 0	10 0 0	8 16 0
1732	5	Do., new shares.	5 0 0	7 10 0	6 15 0
400	5	Walker & St. Anthony (L.)	5 0 0		7¼ to 8¼
		Walker & Wall. Un.			
300	10	Wallingford	10 0 0	5 0 0	8 0 0
	10	*Waltham Abbey.*			
		Walton-on-Tham.			
200	10	Wantage	9 0 0	5 0 0	10 10 0
	2	Ware (Limited)			
100	10	Wareham	10 0 0	3 10 0	8 0 0
2000	1	Warkwth & Amble	1 0 0	3 10 0	
200	25	Warminster	25 0 0	6 0 0	28 0 0
900	20	*Warrington*	20 0 0	10 0 0	37 0 0
900	20	Do., new shares.	18 0 0	10 0 0	30 0 0
		Warth			
		Warwick. £15,000		6 0 0	
		Watchet & W. £2500			
	2	Waterbch (L) £2000			
		Watford			
400	10	Weedon (Limited)	10 0 0	6 10 0	12 10 0
400	3	Do., new shares.	1 10 0	6 10 0	1 17 6
111	25	Welshpool, Montg.	25 0 0	5 0 0	25 0 0
200	25	Wellingborough	25 0 0	5 0 0	25 0 0
450	10	Wellington, Salop.	10 0 0	7 10 0	12 10 0
200	20	Wellington, Som.	20 0 0	7 10 0	22 0 0
160	25	*Wells*, Somerset.	25 0 0	10 0 0	
		Wem (Lim.) £2000			
	5	Wendover (Lim.)			
		W. Auckland & St. Helen's, Auckland (Lim.)			
160	10	Westbury	10 0 0		
		West Cowes			
225	10	Westerham (Lim.)	10 0 0	5 0 0	11 0 0
		West Kent			
454	5	West Malling Gas and Water	5 0 0	3 0 0	4 10 0
200	20	*Weston-s.-Mare*, A shares.	20 0 0	10 0 0	35 0 0
200	20	Do., B shares.	20 0 0	7 10 0	27 0 0
800	20	Do., C shares.	13 10 0	7 10 0	
200	5	Wetherby	5 0 0		1 10 0
2000	10	*Weymouth Cms.*			
		Whaley Bridge			
2300	1	Whitchurch, Hants	0 10 0	5 0 0	
400	20	Whitehaven	20 0 0		14 0 0
		Whitehaven New			
		Whitstable			
		Whittington			
250	10	Whittlesea	10 0 0	5 0 0	11 0 0
300	10	Whitwick & Coalville	10 0 0		10 0 0
1200	5	*Whitworth Vale*	5 0 0	4 0 0	7 0 0
1200	5	Do., new shares.	4 7 6	4 0 0	6 7 6
	5	Wickm. M. L. £1000			
		Widnes Gas & Wtr.			
1250	10	*Wigan*	10 0 0	10 0 0	20 0 0
1250	10	Do., preference.	10 0 0	5 0 0	10 0 0
2500	10	Do., new shares.	5 0 0	7 10 0	8 15 0
400	5	Wigston	5 0 0	6 0 0	5 0 0
		Wigton, Cumberd.			
1020	5	*Willenhall*, A shares.	5 0 0	10 0 0	9 0 0
1020	5*s*	Do., B shares.	2 14 0	5 0 0	2 14 0
510	5	Do., new C sh.	5 0 0	7 10 0	7 0 0
918	5	Do., do.	0 10 0	7 10 0	
		Wilton			
240	10	Wimborne Minster	10 0 0		
130	10	Wincanton	10 0 0	7 0 0	
		Winchcombe £1500			
1610	25	*Winchester Gas & Water*	25 0 0	5 0 0	25 0 0
		Windermere Dist.			
1200	20	*Windsor (Lim.)*	20 0 0	9 0 0	25 0 0
1200	8	Do., pref. shares.	8 0 0	5 0 0	8 0 0
120	20	Do.	20 0 0	7 0 0	20 0 0
141	10	Winslow	10 0 0	6 0 0	10 0 0
120	10	Winterton (Lim.)	10 0 0	5 0 0	
120	5	Do., new shares.	5 0 0	5 0 0	
200	10	Wirksworth	10 0 0	5 0 0	10 0 0
		Wisbeach			
		Witham			
		Witney			
400	5	Wiveliscombe (L.)	5 0 0	6 0 0	5 5 0
		Wivenhoe (L) £2000			
200	10	Woburn	10 0 0	5 0 0	11 0 0
		Woking			
210	10	Wokingham	10 0 0	5 0 0	
54480	Stk.	*Wolverhampton*	10 0 0	10 0 0	19 5 0
4448	10	Do., new shares.	8 10 0	10 0 0	15 12 6
550	10	Woodbridge (Lim.)	10 0 0	10 0 0	
660	2½	Woodstock	2 10 0	5 0 0	
		Woodhouses			
200	7	Wooler	7 0 0		
		Woolton			
2400	5	*Woolwich Comrs.*	5 0 0	10 0 0	8 0 0
2400	5	Do., do.	5 0 0	7 10 0	7 0 0
4800	5	Do., do.	3 0 0	7 10 0	4 0 0
		Woolwh. Equitable			
		Wootton Bassett			
2500	10	*Worcester*	10 0 0	10 0 0	20 5 0
		Workington			
600	10	*Worksop*	10 0 0	8 0 0	
600	5	Do., new shares.	5 0 0	7 0 0	
245	50	*Worthing*	50 0 0	4 0 0	40 0 0
		Worsboroughdale & Worsboro.			
270	12	Wotton-un.-Edge.	12 0 0	4 0 0	40 0 0
1500	10	Wrexham	10 0 0	4 0 0	11 5 0
		Writtle			
		Wye, Kent			
		Wylam			
400	5	Wymondham	5 0 0	6 10 0	5 0 0
		Yarmouth, Isle of Wight			
800	30	*Yarmouth, Norfolk.*	30 0 0	7 10 0	
800	7½	Do., ½ shares	7 10 0	7 10 0	
	5	Yatton Consumers (Limited)			
1675	4	*Yeadon & Guiseley*	4 0 0	5 0 0	4 8 0
1675	2	Do., new shares.	0 5 0	5 0 0	0 5 6
280	30	Yeovil	30 0 0	6 0 0	30 0 0
280	10	Do.			
140	10	Do., new shares.	10 0 0	6 0 0	10 0 0
		York Town			
15000	10	*York United*	5 0 0	10 0 0	10 15 0
		Yoxford			
	5	Ystalyfera L. £4000			
	10	*Ystrad Gas and Water*	2 0 0		
	5	Ystrad Rhondda (Limited)			
		SCOTLAND.			
26000	2½	Aberdeen	2 10 0	10 0 0	5 1 0
700	1	Aberlady			
		Abernethy			
		Aberlour (L.) £650			
500	10	Airdrie	10 0 0	9 0 0	14 10 0
		Alloa			
		Alva, nr. Stirling			
		Alyth			
600	7	Annan	7 0 0	6 0 0	7 0 0
1600	1	Anstruther & Cellardyke	1 0 0	8 0 0	1 6 0
825	20	Arbroath	20 0 0	7 10 0	30 0 0
100	20	Ardrossan	20 0 0	5 0 0	20 0 0
658	1	Auchinleck	1 0 0		
381	5	Auchterarder	5 0 0	7 10 0	7 10 0
750	2	Auchtermuchty	2 0 0	6 0 0	2 10 0
2932	5	Ayr	5 0 0	6 0 0	6 8 0
4250	2	Ayr and Newton Consumers	2 0 0	6 0 0	2 2 0
300	10	Banff	10 0 0	6 0 0	11 0 0
2158	1	Barrhead	1 0 0	7 10 0	1 0 0
200	5	Bathgate	5 0 0	5 0 0	5 0 0
		Beith			
976	1	Bervie	1 0 0	5 0 0	
		Biggar			
739	5	Blairgowrie	5 0 0	8 0 0	7 0 0
		Blantyre (Lim.)			
400	6	Borrowstowness	6 0 0	5 0 0	6 0 0
540	5	Brechin	5 0 0	11 0 0	11 10 0
		Bridge of Allan			
8350	2	Broughty Ferry	2 0 0	6 0 0	2 4 0
		Callender			
		Campbelton			
		Carluke, Lanark			
250	4	Carnoustle	4 0 0	7 10 0	4 0 0
178	5	Castle Douglas	5 0 0	5 0 0	5 0 0
2330	3	Coatbridge	3 0 0	10 0 0	5 0 0
200	5	Coldstream	5 0 0	6 0 0	5 0 0
		Collinsburgh			
1000	1	Comrie	1 14 8	4 10 0	1 14 8
		Corstorphine			
1200	1	Crail, Fife	1 0 0	5 0 0	1 0 0
2744	1	Crieff	1 0 0	10 0 0	1 15 0
600	1	Cullen	1 0 0	5 0 0	0 15 0
280	2½	Cumbernauld	2 10 0	5 0 0	2 10 0
200	5	Cumnock	5 0 0	6 0 0	6 0 0
600	5	Cupar Angus	5 0 0	7 0 0	6 10 0
250	10	Cupar Fife	10 0 0	10 0 0	18 10 0
300	10	Dalkeith	10 0 0	10 0 0	20 0 0
		Deanston			
750	2	Denny	2 0 0	6 5 0	2 5 0
		Denny Consumers			
	5	Dornoch			
500	1	Douglas	1 0 0	6 0 0	1 2 0
		Dufftown			
		Dumbarton			
400	20	Dumfries	14 0 0	7 2 10	14 10 0
391	5	Dunbar	5 0 0	6 0 0	5 10 0
		Dunblane			
860	10	Dunfermline	10 0 0	10 0 0	16 10 0
		Dunkeld			
1750	2	Duncon	2 0 0	6 0 0	2 3 0
		Dunse			
250	5	Dysart	5 0 0	7 10 0	6 10 0
2327	1	East Wemyss	1 0 0	6 0 0	1 2 0
750	1	Ecclefechan	1 0 0		
6000	25	*Edinburgh*	25 0 0	10 0 0	53 0 0
6000	25	*Edinburgh & Leith*	20 0 0	7 0 0	29 10 0
621	12	Elgin	12 0 0	6 0 0	13 0 0
1300	1	Elie & Earlsferry	1 0 0	7 5 0	1 3 0
		Ellon			
		Errol			
		Eyemouth			
	14	Falkirk	14 0 0	7 0 0	14 0 0
		Falkirk, New			
632	2	Falkland	2 0 0	5 0 0	2 0 0
		Fettercairn			
2000	1	Ferry Porton Craig	1 0 0	6 5 0	1 3 0
581	1	Fochabers	1 0 0	5 0 0	1 2 0
1440	5	Forfar	5 0 0	7 10 0	7 12 6
360	5	Do., new shares.	2 10 0	7 10 0	6 10 0
		Fort William			
2000	1	Fraserburgh	0 16 0	5 0 0	0 18 0
1800	5	Galashiels	5 0 0	10 0 0	8 0 0
		Gatehouse, n. Fleet			
900	2½	Girvan	2 10 0	6 0 0	2 10 0
		Grahamston			
190	10	Grangemouth	10 0 0	5 0 0	10 0 0
400	8⅓	Haddington	8 5 0	7 10 0	11 10 0
	£ 1	Hamilton Corporation and Consrs.			
	5	*Hamilton, New*	5 0 0	4 10 0	6 0 0
1460	5	Hawick	5 0 0	7 10 0	8 2 6
300	5	Helensburgh	5 0 0	7 10 0	7 10 0
2000	2	Holywood (Lim.)	2 0 0	7 10 0	3 0 0
1312	1	Huntly	1 0 0	7 10 0	1 5 0
250	5	Inverary	5 0 0	10 0 0	6 12 6
1500	1	Inverkeithing (L.)	1 0 0	5 0 0	1 0 0
1200	10	*Inverness Gas and Water*	10 0 0	7 10 0	13 0 0
2400	5	Do., new shares.	5 0 0	7 10 0	6 10 0
		Inverury			
	10	Irvine	10 0 0	10 0 0	14 0 0
	2½	Do.	2 10 0	10 0 0	3 12 6
300	5	Jedburgh	5 0 0	7 10 0	7 10 0
		Johnstone, Paisley			
		Kemesburgh (L.)			
1300	1	Keith	1 0 0	5 0 0	0 11 0
600	5	Kelso	5 0 0	10 0 0	11 0 0
620	2	Kelsyth	2 0 0	5 0 0	2 0 0
950	1	Kennoway	1 0 0	5 0 0	1 1 0
1515	1	Kettle Freuchie, &c.	1 0 0	5 0 0	5 0 0
600	25	Kilmarnock	25 0 0	7 10 0	30 0 0
600	25	Do., new shares.	7 10 0	7 10 0	
334	5	Kincardine	5 0 0	5 0 0	4 10 0
		Kinghorn			
		Kingskettle, Fife			
		Kinross			
1200	5	Kirkcaldy	5 0 0	10 0 0	10 10 0
320	8	Kircudbright	8 0 0	5 0 0	8 0 0
997	5	Kirkintulloch	3 0 0	6 13 4	3 7 0
		Kirkwall			
		Kirriemuir			
		Lanark			
3500	1	Lanark Consumers (Limited)	1 0 0	7 10 0	1 2 6
		Largo, near Leven			
280	8	Largs	8 0 0	7 10 0	8 10 0
1309	1	Lasswade	1 0 0		
177	5	Lauder	5 0 0	5 0 0	5 0 0
2000	1	Leslie, Fife	1 0 0	7 10 0	1 5 0
618	1	Lesmahago	1 0 0	6 0 0	1 0 0
		Leuchars			
906	5	Leven	5 0 0	10 0 0	7 0 0
100	10	Linlithgow	10 0 0	10 0 0	19 0 0
		Linton			
		Lochee, n. Dundee			
434	5	Lochgilphead (Ld.)	5 0 0	7 0 0	5 10 0
380	5	Lochwinnoch	5 0 0	3 10 0	4 0 0
	14/5	Lockerbie (Lim.)	5 0 6		
		Macduff			
1200	1	Markinch, Paisley	1 0 0	8 0 0	1 5 0
		Maryhill, nr. Glasgow			
282	3	Mauchline	3 0 0	5 0 0	3 0 0
667	5	Maxwell Town and Dumfries	5 0 0	5 0 0	3 to 3¼
423	5	Maybole, Ayrshire	5 0 0	4 10 0	5 0 0
		Meigle (L.) £700			
373	2	Melrose	2 0 0	7 10 0	2 10 0
718	2	Mid & East Calder	2 0 0		2 0 0
200	5	Moffat	5 0 0	5 0 0	
120	2½	Do., new shares.	2 10 0	5 0 0	
400	20	Montrose	20 0 0	10 0 0	35 0 0
		Muirkirk (L.) £1000			
1000	5	Musselburgh	5 0 0	8 0 0	9 9 0
618	1	Nairn	1 0 0	5 0 0	1 0 0
		Neilston, n. Glasg.			
300	5	Newburgh, Fife	5 0 0	8 0 0	7 0 0
300	1	Do., new shares.	1 0 0	8 0 0	
1200	1	Newmilns	1 0 0	7 10 0	1 2 0
		Newport, n. Dundee			
1300	1	Newport, Fife	1 0 0	5 0 0	1 1 0
		Newton-on-Ayre			
107	14½	Newton Stewart	14 10 0	5 0 0	14 10 0
300	5	N. Berwick, N.B.	5 0 0	5 0 0	7 10 0
		N. Queensferry			
245	5	Oban	5 0 0	7 10 0	5 7 6
1000	5	Peebles	5 0 0	6 0 0	5 0 0
500	2½	Do., new shares.	2 10 0	6 0 0	2 10 0
1000	25	Perth	25 0 0	8 0 0	34 0 0
1000	5	Do.	5 0 0	8 0 0	6 16 0
3000	5	Perth, New	5 0 0		0 3 0
		Peterhead			
2000	1	Petterween	1 0 0	6 0 0	1 1 0
2416	1	Polloksbaws	1 0 0	7 10 0	1 5 0
		Port Glasgow			
		Portobello			
		Portsoy			
200	5	Prestonpans	5 0 0	6 0 0	
1594	1	Renton, Dumbrtn.	1 0 0	7 10 0	1 1 0
		Rothes			
1500	1½	Rutherglen	1 6 8	5 0 0	1 6 8
250	12	St. Andrew's	12 0 0	8 6 8	16 10 0
193	12	Do., new shares.	12 0 0	8 6 8	16 10 0
400	5	Saltcoats	5 0 0	7 10 0	6 0 0
936	1	Sanquhar	1 0 0	5 0 0	0 15 0
30	1	Do., preference	1 0 0	5 0 0	
507	5	Selkirk	5 0 0	10 0 0	10 0 0
	2	Slamannan (Lim.)			
508	1	South Queensferry	1 0 0	5 0 0	1 0 0
200	5	Stewarton	5 0 0	10 0 0	6 to 6½
7450	2	Stirling	2 0 0	10 0 0	4 0 0
2500	1	Stonehaven	1 0 0	6 5 0	1 5 0
1110	1	Stonehouse	1 0 0	7 10 0	13s. to 15s.
600	2½	Stornoway	2 10 0	8 0 0	3 10 0
		Stow (Limited)			
500	5	Strameer	5 0 0	10 0 0	6 13 6
588	2	Strathaven	2 0 0	8 0 0	3 0 0
643	2½	Thurso	2 10 0		2 10 0
		Tillicoultry			
		Turriff			
800	1	Tranent	1 0 0	5 0 0	1 0 0
		Troon			
		Tullibody			
2051	1	Wemyss & Bkhn.	1 0 0	6 0 0	1 0 0
		Wick			
665	5	Wigtown	5 0 0		

Share List of Water Companies.

See "Share List of Gas Companies" for Gas and Water Companies.

No of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Last Quotation.
	£	**IRELAND.**	£ s d	£ s d	£ s d
1800	1	Antrim (Limited).	1 0 0		1 0 0
		Ardee			
300	10	Armagh (Lim.)	10 0 0	10 0 0	20 2 6
500	5	Athy (Limited)	4 9 0	6 0 0	5 0 0
		Balbriggan £1400.			
		Ballycastle			
1200	7½	Ballymena & Harryville (L.)	7 10 0	5 0 0	7 10 0
184	10	Ballymoney	10 0 0	5 0 0	10 0 0
220	5	Ballynahinch(Ld.)	5 0 0	5 0 0	5 0 0
		Ballyshannon£2000			
		Bangor, Down			
5250	20	*Belfast*	20 0 0	10 0 0	39 0 0
2450	20	Do., new shares.	20 0 0	10 0 0	35 to 37
		Boyle (Limited).			
1047	5	Carlow	5 0 0	5 0 0	5 0 0
600	5	Carrickfergus(Ld.)	5 0 0	8 0 0	6 5 0
197	10	Carrickmacross(L.)	10 0 0	5 0 0	10 0 0
300	10	Carrick-on-Suir	10 0 0	6 0 0	10 0 0
228	10	Castleblaney (Ld.)	10 0 0	5 0 0	10 0 0
		Castlederg			
400	5	Cavan (Limited)	5 0 0		5 0 0
		Clones (L.) £2000			
2000	5	Clonmel Consmrs.	5 0 0	6 0 0	5 10 0
240	5	Comber (Limited).	5 0 0	5 0 0	5 0 0
500	5	Cookstown	5 0 0	5 0 0	
		Coote Hill			
12000	5	*Cork Consumers* (Limited)	5 0 0	8 0 0	7 15 0
6000	5	Do., new shares.	4 0 0	8 0 0	6 10 0
		Donaghadee £2000			
608	11	Drogheda	11 0 0	7 0 0	14 10 0
420	5½	Do., new shares.	5 10 0	7 0 0	7 5 0
19000	10	*Dublin Alliance*, A shares.	8 0 0	6 0 0	10 15 0
10000	10	Do., B shares	5 0 0	6 0 0	6 7 6
13500	10	Do., C No. 1 sh.	10 0 0	6 0 0	12 17 6
12500	10	Do., C No. 2 sh.	4 0 0	6 0 0	5 7 6
440	25	Dundalk (Limited)	25 0 0	8 0 0	25 0 0
600	5	Dungannon	5 0 0	5 0 0	6 0 0
871	5	*Downpatrick*	5 0 0	4 0 0	4 0 0
249	10	Ennis (Limited)	10 0 0		11 0 0
240	25	Galway	25 0 0	10 0 0	35 0 0
		Gorey (L.) £2000			
		Holywood (Lim.)			
	10	Howth (L.) £35 0			
		Keady			
600	5	Kells (L.) Meath	5 0 0	6 0 0	5 0 0
600	10	Kilkenny (Limited)	10 0 0	9 0 0	12 10 0
		Killarney (L.)£3000			
		Kilrush			
		Kinsale (L.) £2000.			
210	10	Larne (Limited)	10 0 0	5 0 0	10 0 0
150	10	Letterkenny (Ld.)	10 0 0	6 0 0	11 0 0
		Limerick (see United Gen.)			
500	10	Lisburn (Limited)	10 0 0	10 0 0	15 0 0
300	5	Lismore	5 0 0	3 0 0	
100	5	Do., preference.	3 0 0	5 0 0	
1200	27½	Londonderry	27 10 0	5 9 0	33 0 0
1000	3	Longford	3 0 0	5 0 0	3 0 0
540	10	Lurgan	8 0 0	6 0 0	9 0 0
	1	Maghera (Lim.)			
		Mallow			
2191	1	Maryborough(Ld.)	0 5 0		0 5 0
		Midleton			
770	5	Monaghan (Lim.)	5 0 0	4 10 0	5 16 0
2000	10	Navan	5 0 0	6 0 0	4 0 0
		Nenagh			
1000	5	New Ross	6 0 0	10 0 0	6 0 0
1400	5	Newry Conrs. (L.)	5 0 0	10 0 0	8 3 0
450	5	Newtownards	5 0 0	7 0 0	6 5 0
200	10	Newtownlimavady	10 0 0	5 0 0	10 0 0
		Omagh	5 0 0	7 10 0	6 0 0
250	20	Portadown	20 0 0	5 0 0	20 0 0
125	20	Portaferry			
700	10	Queenstown	10 0 0	6 0 0	11 0 0
		Roscommon £2500.			
	5	Roscrea (L.) £2500.			
		Saintfield(L.) £1000			
600	5	Skibbereen(Lim.)	5 0 0	4 0 0	
600	10	Sligo	10 0 0	8 0 0	12 10 0
609	5	Do., new shares.	5 0 0	8 0 0	6 5 0
		Tandragee (Lim.)			
	5	Thurles (L.) £2500			
		Tuam (L.) £3000			
546	5	Tullamore	5 0 0	6 0 0	5 0 0
240	5	Tullow	5 0 0	6 0 0	5 0 0
		Warrenpoint £3000			
1600	10	*Waterford*	10 0 0	6 0 0	12 0 0
1200	5	Wexford Consmrs.	5 0 0	10 0 0	8 0 0
300	10	Wicklow (Lim.)	10 0 0	6 0 0	10 0 0

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Last Quotation.
			£ s d	£ s d	£ s d
		Airdrie and Coatbridge			
588	1	Alexandria, Dumbartonshire	1 0 0		0 2 6
800	25	Ayr	25 0 0	5 0 0	25 0 0
1460	10	Banbury	10 0 0	3 10 0	9 0 0
		Belper			
9600	25	Birmingham	25 0 0	6 10 0	34 0 0
9600	17½	Do., new shares.	3 0 0	6 10 0	
6000	10	Blackburn	10 0 0		
		Boston			
		Bridge of Earn (L) £450			
		Brighton, Hove, and Preston			
8000	25	Bristol	25 0 0	3 2 0	20 to 21
8993	12½	Do., preference	12 10 0	5 0 0	13 2 6
500	10	Briton Ferry	5 0 0		
		Broadstairs		4 0 0	
		Brompton and Gillingham			
5000	10	Bury and Radcliffe	10 0 0	2 0 0	10 0 0
1333	15	Do., pref. shares.	15 0 0	10 0 0	31 15 0
1333	18	Do., do.	6 0 0	10 0 0	14 0 0
2000	10	Do., do.	5 0 0	4 0 0	5 0 0
2000	10	Do., do.	1 0 0	4 0 0	5 0 0
3250	10	Cambridge	10 0 0	7 0 0	16 0 0
3250	3	Do.	3 0 6	7 0 0	4 16 0
	Sk.	Cardiff	100 0 0	5 15 0	115 0 0
1500	10	Do.	8 0 0	5 15 0	9 0 0
		Charlemb. L. £3000			
55625	Sk.	Cheltenham	100 0 0	5 5 0	120 0 0
687½	25	Do., pref. shares.	25 0 0	4 10 0	25 0 0
		Chepstow			
		Chester			
2485	2	Clay Cross	2 0 0	8 0 0	2 16 0
508	2	Do.	0 10 0		0 14 0
		Colchester			
175	20	Colne, Lancashire	20 0 0	5 0 0	28 0 0
	5	Consett District	4 0 0		4¾ to 4¾
		Dartford			
1250	20	Darwen	20 0 0	3 0 0	15½ to 16½
1400	5	Deal	5 0 0	7 0 0	6 0 0
1600	25	Derby	25 0 0	10 0 0	55 17 6
400	50	Dudley	50 0 0	1 0 0	20 0 0
250	25	Do., pref. shares	25 0 0	4 10 0	
		Dukinfield			
9500	10	Dundee	10 0 0	7 10 0	15 0 0
5100	10	Do.	10 0 0	6 10 0	13 10 0
2670	5	Dunfermline	5 0 0	2 0 0	2 10 0
	5	Durham	5 0 0		7¼ to 7½
		East Barnet Gas and Water			
7360	25	Edinburgh	25 0 0	5 0 0	28 0 0
7360	12½	Do., new shares.	12 10 0	5 10 0	16 0 0
7218	6¼	Do., do. ¼ shares	6 5 0	5 0 0	7 0 0
5581	6¼	Do., do. do.	2 10 0	5 0 0	2 15 0
2000	25	Exeter	25 0 0	6 10 0	42 0 0
		Falmouth			
	2	Fenny Com. L. £600			
		Folkestone			
		Gosport			
	20	Gravesend and Milton	20 0 0	3 0 0	14 to 16
		Great Grimsby (L)			
1000	5	Greenock (Shaw's Gravitation)	50 0 0	7 0 0	68 to 70
		Guiseley, n. Leeds.			
		Harrogate			
		Heywood			
388	10	Horsham (Lim.)	10 0 0	1 0 0	
1500	10	Kilmarnock	10 0 0	2 0 0	8 0 0
3200	25	Leicester	25 0 0	4 10 0	27 10 0
120	25	Lewes	25 0 0	6 0 0	26 0 0
		Limerick			
1080	25	Lincoln	25 0 0	8 0 0	43 10 0
2300	5	Luton	4 0 0		
		London Comps.—			
47000	10	Berlin	10 0 0	4 10 0	8 to 9
12000	25	Chelsea	25 0 0	5 5 0	28 to 29
975000	Sk.	East London	Stock.	6 0 0	126 to 128
10000	50	Grand Junction	50 0 0	8 0 0	78½ to 79
5840	25	Do., ¼ shares.	25 0 0	8 0 0	39½ to 39¾
2160	25	Do., new ¼ sh.	10 0 0	7 10 0	
2310	100	Kent	100 0 0	6 0 0	129 to 131

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Last Quotation.
			£ s d	£ s d	£ s d
1460	100	Lambeth	100 0 0	6 0 0	110 to 115
4120	50	Do., new shares.	50 0 0	6 0 0	51½ to 53
		New River		141 6 8	£17,400
1560	100	New River London Bge. Annuities	100 0 0	per sh. 2 10 0	55 0 0
	5	N.Mdlsx.L.£30,000			
3036	100	Southwark and Vauxhall	100 0 0	6 0 0	126 to 128
3036	25	Do., do.	25 0 0	6 0 0	31½ to 33½
1296	100	Do., do.	100 0 0	5 0 0	104 to 106
1296	100	Do. (1867)	85 0 0	4 10 0	106 to 108
12168	61	West Middlesex	61 0 0	5 15 0	110 0 0
		Do., new shares.	6 2 0	per sh. 4 0 0	9 to 9¼
		Liskeard			
		Maidstone			
		Maldon (Lim.)			
		Margate			
		Matlock			
650	10	Neath	10 0 0	7 10 0	14 0 0
310000	Sk.	Newcstl. & Gatehd.	All.	4 10 0	77 to 78
9600	6¼	Do., pref. do.	5 0 0	5 0 0	5¼ to 5½
135	20	Newport, Carisbrooke	20 0 0	4 10 0	26 0 0
		Newport, Mon.			
		Newry (L.) £6000.			
2000	10	North Cheshire	10 0 0	10 0 0	17 10 0
1600	10	Do.	4 0 0	10 0 0	7 0 0
	10	North Shields	10 0 0		12 to 12½
		Norwich			
3600	50	Nottingham	50 0 0	5 0 0	60 10 0
		Pontypridd (Lim.)			
		Poole District (L.)			
	5	Portland (Lim.)			
8000	10	Portsmouth	10 0 0	6 0 0	
8000	5	Do.	2 10 0	6 0 0	
451	10	Queenstown (L.)	10 0 0	6 0 0	10 0 0
693	5	Ramsey, I. of Man	5 0 0	10 0 0	9 5 0
1500	10	Ramsgate	10 0 0	6 0 0	13 to 13½
		Reading			
		Rochdale			
		Rothesay(L.)£7000			
		Royston (L.) £2500			
		Saffron Walden (Lim.)			
900	10	St. Alban's	10 0 0	4 0 0	10 0 0
		St. Helen's			
	1	Sanquhar (Lim.)			
		Scarborough			
	100	Sheffield			71 to 72
	50	Do.			35 to 36
	25	Do.			17 to 18
	50	Do., preference			40 to 41
	12½	Do., B do.	10 0 0		⅝ to ¾ pm.
	8	Do., C do.	2 0 0		2 6 6
		Shrewsbury			
		Southport			
11184	10	South Staffordshire	10 0 0		11 17 0
2534	10	Do.	5 0 0		
		Spalding			
21000	5	Staffordshire Potteries	5 0 0	6 0 0	7 5 0
1800	12½	Stockton and Middlesboro'	12 10 0	6 0 0	
800	12½	Do., A shares.	12 10 0	6 0 0	
1591	12½	Do., B shares.	7 0 0	6 0 0	
4000	10	Do., C preference	2 0 0	5 0 0	2¾ to 3
		Stow-on-W. £1000			
37200	5	Sunderland and South Shields.	5 0 0	9 10 0	9 10 0
		Tintwhistle			
		Tolcross, Lanark			
		Tweedmouth (L.) £500			
		Wakefield			
3000	10	Warrington	10 0 0	9 0 0	14 10 0
5000	8	Do.	1 0 0		2 1 0
		Wellington, Salop.			
		Weston-sup-Mare.			
		Weymouth			
		WinchesterG.& W.			
		Wirral, Cheshire			
20000	5	Wolverhmptn New Yeadon (Limited)	5 0 0	4 0 0	5 0 0
6000	10	York New Co.	10 0 0	5 0 0	11 12 6

GAS-WORKS BELONGING TO PRIVATE INDIVIDUALS.

Those marked * by the purchase of the shares in extinct companies.

Alford.
Ballina.
Beaufort (Brecon).
Beaumaris.
Berkeley.
Billericay.
Bodmin.
Broadbottom.
Bungay.
Burntisland.
Chapel-en-le-Frith.
Chard.
Clare, Suffolk.
Crewe.
Dingwall.
Donnington, Salop.
Ebbw Vale.
Eccleshill, near Leeds.
Ellesmere.
Enniscorthy.
Farsley.
Fermoy.
Ferry Hill.
Goole.
Hadleigh.
Halstead.
Harleston.
Harrow-on-the-Hill.
Hayle.
Holt.
Hunmanby.
King's Langley.
Leiston (Suffolk).
Lynn.
Milnrow, nr. Manchester.
Mold Green, nr. Huddersfield.
Mullingar*.
Nantwich*.
Nettlebed.
Newport (Isle of Wight).
New Ross.
Oakham*.
Parsonstown.
Penryn.
Pontypool.
Redditch.
Ripon.
Ross.
Rhyl.
St. Blazey (Cornwall).
St. Ives* (Hunts).
St. Neots*.
Seaham.
Sittingbourne.
Southall, Midlsex.
Stokesley.
Stowmarket.
Thirsk.
Tipperary.
Tiverton*.
Wem.
Whitby*.
Whitchurch (Salop).

GAS-WORKS BELONGING TO LOCAL BOARDS, MUNICIPAL CORPORATIONS, OR COMMISSIONERS,

Acting under special Acts of Parliament.

Aberavon.
Abergavenny.
Athlone.
Ballinasloe.
Bethesda, Bangor.
Beverley.
Bingley.
Birkenhead.
Blackpool, & Layton with Warbk.
Bollington (Ches.).
Brighouse.
Burnley.
Burton-on-Trent.
Bury (Lanc.).
Carlisle.
Cashel.
Coleraine
Congleton.
Dalton.
Darlington.
Devizes.
Doncaster.
Dundee.
Enniskillen.
Glasgow.
Great Malvern.
Greenock.
Halifax.
Haverfordwest.
Heywood.
Highbridge.
Keighley.
Knaresborough.
Leek.
Limerick Corp. Wks.
Lytham (Lanc.).
Macclesfield.
Manchester.
Maryport.
Middlesborough.
Middleton.
Milton (Kent).
Nelson, n. Burnley.
Newton (Lanc.)
Oldham.
Oswaldthwistle.
Paisley.
Renfrew.
Richmond (Yorkshire).
Ripon.
Rochdale.
Rothesay.
St. Mary Church.
Salford.
Southport.
Sowerby Bridge.
Spalding.
Stockport.
Stockton-on-Tees.
Strabane.
Teignmouth.
Tenby.
Tralee.
Trim (Meath).
Tyldesley & Shakerley.
Wallasey.
Walsall.
Wells (Norfolk)
Widnes.
Workington.
Youghall.

WATER-WORKS BELONGING TO PRIVATE INDIVIDUALS.

Campbelltown.
Chidwall (Lancaster).
Hyde (Cheshire).
Knaresborough.
Stamford.
Windsor & Eton.

Price Current.

CASTINGS.—*Per Ton.*

Average Weight of Cast-iron Gas-pipes, per Yard.

1 in.	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
16	21	28	33	51	70	89	107	126	149	177	208 lb.

Retail Prices are 5 to 10 per cent. higher.	London.			Glasgow.			Newcastle and Middlesboro'.			Wales.			Yorkshire, Derbyshire, and Staffordshire.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Pig Iron, No. 1 (g.m.b.)	—			2	18	0	2	11	6	—			3	10	0
1¼ and 2-inch Socket-pipes	7	0	0	5	15	0	5	10	0	6	0	0	7	0	0
2½ and 3-inch ditto	6	10	0	5	5	0	5	0	0	5	15	0	6	10	0
4 and 5-inch ditto	6	0	0	4	15	0	4	10	0	5	5	0	6	0	0
6 inches and upwards ditto	5	15	0	4	5	0	4	0	0	5	0	0	5	15	0
Retorts, 1st fusion, hot blast	5	10	0	4	10	0	4	5	0	5	0	0	5	10	0
Ditto, 2nd ditto, cold ditto	6	10	0		—			—			—		6	10	0
Tank-plates, ¾ thick and above	6	0	0	5	0	0	4	15	0	5	10	0	6	0	0

WROUGHT-IRON TUBING,

Subject to 60 per cent. Discount.

	2 in.	1¼ in.	1½ in.	1 in.	¾ in.	½ in.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Patent Welded Tubes, from 2 to 14 feet—per foot	1 8	1 1	0 10	0 7	0 5	0 4½
Ditto ditto, from 12 in. to 23½ in.—each	3 0	2 0	1 6	1 1	0 9	0 8
Long Screws, from 12 in. upwards	4 0	2 3	2 0	1 6	1 2	0 11
Bends and Springs	4 3	2 3	1 9	1 3	0 11	0 8
Square Elbows, equal or reducing; Round Elbows, 5 per cent. extra	3 9	2 3	1 9	1 3	0 10	0 8
Tees, wrought or cast	4 0	2 6	2 0	1 6	1 1	0 9
Crosses, ditto, equal or reducing	4 9	3 6	3 0	2 3	1 9	1 6
Iron Cocks	20 9	13 0	10 0	7 3	5 0	3 8
Ditto, with brass plug	28 0	16 0	13 0	7 0	5 6	4 6
Diminishing Sockets, Caps, Plugs, and Nipples	1 3	0 9	0 8	0 6	0 5	0 4½
Plain Sockets	1 0	0 8	0 7	0 5	0 4	0 3
Syphons, 2-quart	15 0	14 0	13 6	13 0	12 0	—

GAS COALS.

Newcastle—Unscreened:—	Per Ton.
Haswells, Nettlesworth Primrose, and South Pelaw	6s. 6d.
Felling, Framwell Gate, North Pelton, Redheugh Main, Walker's Primrose, West Wear, and Whitwell Primrose	6 9
Burnhope, Craghead, Charlaw, Derwent, East Castle, Edmondsley, Eighton Moor, Hartlepool Pelaw, Holmside, Lambton's Gas, Lanchester Pelaw, Medomsley, Mickley, New Pelaw, Pelaw Main, Ravensworth, Seaham, South Moor Pelton, South Leverson, Townley Main, Tyne Main, West Pelaw, Wearmouth Hutton, and Witton	7 0
Peareth, Ravensworth Pelaw, Waldridge, West Garesfield, and West Pelton	7 3
Brancepeth, Dean's Primrose, Londonderry Gas, New Pelton, Pelton, South Peareth, Stella, Urpeth, Washington Hutton, and West Leverson	7 6
Ramsay's Newcastle Cannel	15 0
Wigan Cannel (at Liverpool)	17 0

Scotch Cannel:—	Per Ton.	*Scotch Cannel:—*	Per Ton.
Boghead—at Bo'ness, 47s. 6d.; at Leith	48s. 2d	Pirnie, or Methill	17s. 6d
Muirkirk	27 0	Lothian's Cannel (f.o.b. at Leith)	26 0
Kirkness, best (at Burntisland)	28 6	Bo'ness Cannel (at Bo'ness)	19 0
Capeldrae, 1st quality (at ditto)	28 6	Myles' Cannel	23 6
Ditto, 2nd ditto (at ditto)	18 6	Kinnail (at Bo'ness)	17 6
Cowdenbeath	12 0	Lochore Parrot (at Burntisland)	28 6
Lesmahago (at Glasgow)	31 6	Lanemark (at Glasgow)	16 0
Ditto (at Granton)	32 6	Elphinstone Tower (at Leith)	20 0
Arniston	27 6	Coppa Cannel (on rails at Birkenhead)	13 6
Wemyss, f.o.b.	22 6	Ditto ditto (ditto at Connah's Quay)	13 0
Haywood, Wilsontown (at Granton)	23 0		

FREIGHTS.

Coastwise—Newcastle:—	Per Ton.	*Foreign:—*	Per Keel.
Chatham and Rochester	6s. 6d	Barcelona	£20 10s
Cork	10 0	Bordeaux	13 0
Dover, Folkestone, and Ramsgate	7 0	Boulogne and Calais	8 0
Dublin	10 6	Cadiz	12 10
Exeter Quay	10 6	Cronstadt	—
Ipswich	5 0	Copenhagen	£9 to 10 0
London (from Leith)	8 6	Genoa	20 0
London (Pool)	6s. 3d. to 6 0	Hamburg	10 0
Lowestoft and Yarmouth	4 6	Havre de Grace	10 10
Portsmouth and Southampton	8 6	Leghorn	19 0
Plymouth	9 6	Lisbon	12 5
Shoreham	7 6	Rotterdam	10 10
Whitstable	6 0	Stettin	9 10
Weymouth	9 0	Trieste	16 0
		Venice	19 0

SUNDRIES.

Best Newcastle Fire-bricks, per 1000	£2 10s. to £2 15s. 6d.
Cliff's Fire-bricks (at Wortley), per 1000	2 15 6
Ingham's ditto (at Wortley), per 1000	2 15 0
Farnley Iron Co.'s Fire-bricks (at Wortley), less discount	2 17 0
Fire-clay Retorts, per foot run	5s. 6d. to 0 7 6
Tarred Rope Yarn, per cwt.	1 0 0

CHEMICAL, MINERAL, AND METAL MARKETS.

[*From* J. Beeber Spence and Co.'s *Weekly Report.*]

In minerals there is no change of consequence; quotations for iron ore have been a little firmer, and some few contracts for spring delivery have been negotiated for hematites. The metal market has been affected by the broken week, and very little business has been done. Scotch pig iron continues in brisk demand, and values are fully maintained. Cleveland also is firm. No change was made in the price of manufactured iron at the preliminary meeting lately held in Birmingham. Copper and tin are both depressed, and quotations almost nominal. Lead is selling freely at full rates. Spelter dull, but no alteration in prices.

CHEMICALS.

SODA.—The market for all descriptions of Soda continues quiet, and Soda Ash of 48 per cent. remains at £7. Caustic Soda of 60 per cent. at £13. Soda Crystals, £4. Salt Cake, 57s. Bicarbonate, £9.

NITRATE OF SODA sells at £15 to £15 7s. 6d., and £14 10s. to arrive.

POTASH.—Muriate is still scarce, and 80 per cent. obtains £7 7s. 6d. to £7 12s. 6d.

SALTPETRE.—Very quiet, with but little doing at 22s. 6d. to 23s. foreign, and 26s. 6d. English refined.

ALUM.—Most of the consumers have contracted for twelve months supply, and prices show a hardening tendency. Loose Lump is £6 5s., and Export Barrels £7. Ground at £7. London prices, 10s. per ton extra.

AMMONIA.—Sulphate of high quality rather heavy at £17. Brown at £15 10s., very active. Muriate, £22 to £23.

COPPERAS.—Green and Rusty dull at £2 12s. Dry much wanted at £2 10s.

PYRITES is in increasing requirement, and prices remain firm. Calcined sellsreadily at 44s., R. C., with 45s. 6d. asked.

LIME.—Phosphate rather quiet at 52s. 6d. for 65 per cent. Bleaching Powder continues very firm, and sells at £8 to £8 2s. 6d. for 35 per cent. Disinfectants sell freely at £5 5s. per ton for the best quality.

MANGANESE is rather unsaleable, and prices have given way.

IRON ORE.—Hematite well contracted forward, and prices are unaltered. Oolitic Ore is receiving fresh impulse from the increasing demand, and is not obtainable under 6s. 9d. to 8s. 6d., in Staffordshire.

METALS.

IRON.—Scotch Pig Iron closes strong at 57s. 9d. to 57s. 10½d. Cleveland firm at 49s. for No. 4 Forge, to 53s. 6d. for No. 1. Welsh Bars, £6 5s. to £6 10s. Staffordshire Bars, £7 10s. to £8 10s. Gas Tubes, 60 per cent. to 67½ per cent. off list. Boiler Tubes, 40 per cent. to 42½ per cent.

COPPER.—Dull. English Tough, £71 to £72. Chili Slab, £66 5s. to £67.

TIN.—Weak. English Ingots, £117. Straits, £109 to £110.

LEAD.—Firm. P. G. Best English Soft Pig Lead, £19.

SPELTER.—Quiet. English, £20 to £20 10s. Silesian, special brands, £19 10s. to £19 12s. 6d. Hard Spelter, £16.

Share List of Metropolitan Gas Companies.

Number of Shares Issued.	Amount per Share.	Name of Company.	Amount paid up p. Share.	Dividend p. Cent. p. Annum.	Latest Quotations.
	£		£ s. d.	£ s. d.	£
8000	10	Anglo-Romano	10 0 0	10 0 0	11 — 12
5000	20	Bahia (Limited)	20 0 0	3 0 0	11 — 11½
1000	20	Do., preference	20 0 0	10 0 0	23 — 24
750	20	Do., do., redeemable	20 0 0	10 0 0	20 — 22
40000	5	Bombay (Limited)	5 0 0	4 10 0	4½ — 5
10000	5	Do., third issue	4 0 0	4 10 0	3¾ — 4
10000	20	British (Limited) (Norwich, Hull-Sculcoates, Hanley, Tunstall & Shelton [Potteries], Trowbridge, & Holywell.)	20 0 0	10 0 0	30 — 31
12000	50	*Chartered*	50 0 0	6 0 0	58 — 58½
6060	50	Do.	45 0 0	6 0 0	52½ — 52¾
30000	10	Do., preference	1 0 0	5 0 0	
10000	20	*City of London*, A shares	20 0 0	9 0 0	25¾ — 26½
10000	10	Do., B shares	10 0 0	4 0 0	6¾ — 7
9629	10	Do., new shares	10 0 0	9 0 0	12¾ — 13
17490	25	*Commercial*	25 0 0	10 0 0	39 — 40
20000	20	Continental Union	20 0 0	8 0 0	26½ — 27
10000	10	Do., new	2 10 0	..	4¾ — 4¾
5213	20	Do., preference	20 0 0	7 0 0	23 — 24
5000	10	*Crystal Palace District*	10 0 0	10 0 0	14¼ — 15
5000	10	Do., preference	10 0 0	6 0 0	11 — 11¼
10000	10	Do., new shares	10 0 0	7 0 0	11 — 11¼
4000	50	*Equitable*	50 0 0	10 0 0	77 — 78
4000	25	Do., new shares	25 0 0	10 0 0	38¼ — 39
23406	10	European (Limited)	10 0 0	11 0 0	16 — 16½
12000	10	Do., new shares (Boulogne, Amiens, Rouen, Caen, Havre, & Nantes.)	5 0 0	11 0 0	8¼ — 8¾
20000	10	*Great Central Gas Consumers*	10 0 0	..	13 — 13¼
5000	10	Hong Kong (Limited)	10 0 0	6 0 0	8 — 10
26000	50	*Imperial*	50 0 0	10 0 0	79¼ — 80
26000	10	Do., new shares	4 0 0	10 0 0	8¾ — 9
26000	12½	Do., new shares	12 10 0	7 0 0	14 — 14¼
1300	100	Do., bonds	£100	10 0 0	175 — 180
28000	50	*Imperial Continental* (Amsterdam, Berlin, Ghent, Hanover, Lille, Rotterdam., Aix-la-Chapelle, Antwerp, Bordeaux, Brussels, Cologne, Frankfort-on-Maine, Haarlem, Stolberg, Toulouse, & Vienna.)	43 15 0	18 5 0	125½ — 126
400	100	Imperial Mexican (Limited)	100 0 0	nil.	
200	100	Do., new	100 0 0	nil.	
3000	40	*Independent*	40 0 0	10 0 0	56 — 58
3000	10	Do.	10 0 0	5 0 0	7 — 8
3000	20	Do.	15 0 0	7 10 0	15 — 16
7133	50	*London*	50 0 0	10 0 0	75 — 77
5610	25	Do., 1st preference	25 0 0	6 0 0	26 — 28
503	50	Do., 2nd preference	50 0 0	6 0 0	
214	50	Do., 3rd preference	50 0 0	6 0 0	
£18781		Do., 1st preference stock		6 0 0	
£11828		Do., 2nd preference stock		5 0 0	
		Nictheroy, Brazil (Limited)			
15000	5	Malta and Mediterranean (Limited)	5 0 0	3 10 0	3¾ — 4
6000	5	Do., preference	5 0 0	7 0 0	4¾ — 5¼
30000	5	Oriental (Calcutta)	5 0 0	10 0 0	8 — 8½
30000	5	Do., new shares	1 0 0	10 0 0	2¼ — 2½
10000	5	Ottoman (Limited)	5 0 0	nil.	1¾ — 2¼
12500	10	Pará (Limited)	10 0 0	7 10 0	9¾ — 9¾
27000	20	*Phœnix*	26 0 0	10 0 0	30 — 30½
3600	100	Do., new	40 0 0	7 10 0	43 — 44
144000	Sk.	Do.	100 0 0	5 0 0	73¼ — 74¼
5000	20	*Ratcliff*	20 0 0	10 0 0	26 — 27
	20	Rio de Janeiro (Limited)	20 0 0	10 0 0	25¼ — 25¾
6959	5	Singapore (Limited)	5 0 0	4 0 0	
2000	5	Do., preference	5 0 0	7 10 0	
		Shanghai			
4000	50	*South Metropolitan*	50 0 0	10 0 0	78 — 80
4000	12½	Do.	12 10 0	10 0 0	19½ — 20
20000	12½	Do., new shares	1 0 0	10 0 0	3 — 3¼
15000	10	*Surrey Consumers*	10 0 0	10 0 0	14½ — 15
10000	10	Do., new	6 0 0	10 0 0	8¼ — 9
9000	4	United General (Limerick)	4 0 0	5 0 0	2 — 2¼
10000	10	*Victoria Docks*	5 0 0	6 0 0	
1500	10	*Wandsworth and Putney*	10 0 0	10 0 0	10 — 12
1500	10	Do.	10 0 0	7 10 0	
1819	10	Do.	10 0 0	7 10 0	
1138	10	Do.	5 0 0	7 10 0	
20000	10	Western (Limited) A shares	10 0 0	10 0 0	16 — 16½
10000	10	Do., B shares	7 0 0	10 0 0	11¼ — 12¾
10000	10	Do., C shares	7 0 0	10 0 0	11¼ — 12
20000	10	Do., D shares	1 0 0	10 0 0	2¾ — 3
16000	5	*West Ham*	5 0 0	7 10 0	7 — 7¼
551	10	West London Junction (Limited)	10 0 0	6 0 0	
520	10	Do., preference	10 0 0	6 0 0	

THE

DUKE OF HAMILTON'S

LESMAHAGOW

CANNEL COAL.

LESSEES:

THE NITSHILL & LESMAHAGOW COAL COMPANY.

OFFICE:

37, ST. VINCENT PLACE,

GLASGOW,

Where all communications are requested to be addressed.

TO GAS ENGINEERS.

WANTED, by the Advertiser, a situation as GAS-FITTER and SMITH.
Address A. BAYNHAM, Gas-Works, ABINGDON.

TO COUNTRY GAS COMPANIES & OTHERS.

WANTED, by the Advertiser, a situation as MANAGER or GENERAL FOREMAN. Is a thorough good practical man, can produce the best testimonials, and can produce and give better results in the carbonizing and working part of a Gas-Work than any other man in existence at the present day, which testimonials will show. Salary required £150 per year, with house, fire, and gas.
Address M. P., care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

WANTED, by a steady, experienced, middle-aged Man, a situation as MANAGER of a small Gas-Work. Is a good fitter, thoroughly understands the making and distribution of gas, setting of retorts, main and service laying, meter indices, and can undertake any alterations and extensions. Testimonials good.
Address ALPHA, 2, Keyfield Terrace, Old London Road, ST. ALBAN'S.

WANTED, by a young Man, aged 25, a situation as METER TESTER or Out-door INSPECTOR. Country preferred. Three years experience as Meter-Tester. First-class references.
Address F. A. J., 22, Addington Square, Camberwell, LONDON, S.E.

TO GAS MANAGERS.

WANTED, immediately, a thoroughly well qualified GAS MANAGER, possessed of a well-grounded knowledge, founded on personal experience, of all the routine duties of a moderately large and well-managed Gas-Work.
To a suitable man a salary of £300 a year will be given.
Applications will be received immediately and until the 24th of Dec. inst.,* and to be addressed to W. S., enclosing testimonials, to the care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

* The time of application has been prolonged to the 21st of January.

WANTED, to complete a Set, No. 23 of the JOURNAL OF GAS LIGHTING. Any subscriber willing to part with this number may obtain Three times the marked price for it by applying to Mr. KING, 11, Bolt Court, FLEET STREET, E.C.

TO GAS COMPANIES, ENGINEERS, &c.

A First-class Fitter is in want of a SITUATION. Good testimonials, &c.
Address J. B., care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

IN LIQUIDATION,

CHOBHAM GAS COMPANY, LIMITED.
TO BE SOLD, by Private Contract, the above works, situate in the improving village of Chobham, Surrey, erected in the year 1865 under the superintendence of an eminent Gas Engineer. The works consist of—
A RETORT-HOUSE, measuring 13 ft. 3 in. by 21 ft. 6 in. (with an ornamental chimney-shaft, 30 ft. high), containing 3 iron D retorts, ascension-pipes, hydraulic main, with 4-in. connexions to the condenser, coal-store, 13 ft. 4 in. by 16 ft.
PURIFYING-HOUSE, 14 ft. by 13 ft. 6 in., containing 2 purifiers, with inlet and outlet valves.
The METER-HOUSE, 6 ft. 6 in. by 7 ft., contains a meter by "Crosley," capable of passing 600 ft. per hour.
One Cast-Iron TANK, containing gasholder, 24 ft. diameter and 12 ft. deep, by "Hodge and Co., London," with 3 columns, pulleys, chains, and balance-weights complete.
There are about 2 miles of 4-in., 3-in., and 2-in. Mains, with syphons and service-pipes, together with 38 Meters.
There is also on the premises a brick-built Cottage, recently erected, containing four rooms.
The works are approached from the main road by entrance gates, and stand upon about a quarter of an acre of land. The whole is freehold, and possession may be had on completion of the purchase.
A portion of the purchase-money can remain on mortgage on terms to be agreed upon.
Further particulars can be had of Mr. WILLIAM WELLS, Surveyor, Rydes Hill, near GUILDFORD; or of PHILIP W. LOVETT, Solicitor, GUILDFORD.

PARA GAS COMPANY, LIMITED.
NOTICE is hereby given that the ORDINARY GENERAL MEETING of the Shareholders in this Company (convened for this day) stands ADJOURNED to FRIDAY, the 7th proximo, at Noon, in consequence of the quorum of Shareholders prescribed by the Articles of Association of the Company not having been present.
By order of the Board,
(Signed) THOS. S. BORRADAILE, Secretary.
No. 3, Victoria Street, Westminster, Dec. 31, 1869.

GAS PURIFIERS FOR SALE.

IN consequence of Enlargement, a Set of Four Cast-Iron PURIFIERS, 6 ft. by 4 ft. 3 in., with four tiers of riddles in each, lids, centre-valve, 7-in. connecting-pipes, and crane for removing lids, all complete and in working order.
Apply to THOS. BELL, Gas-Works, SELBY.

CITY OF DURHAM GAS COMPANY.

THE Extensions now in course of progress at the Durham Gas-Works will necessitate the disposal of the following:—
GASHOLDER, 30 ft. diameter by 12 ft. deep, with columns, chains, &c., complete.
Two WASH-BOXES, 6 ft. by 4 ft.
Four Dry-Lime Circular PURIFIERS, 6 ft. diameter by 4½ ft. deep, with hydraulic valve, 8 tiers of riddles, 9-in. connexions.
ENGINE, 4-horse, and EXHAUSTER, with by-pass connexions. BOILER, nearly new, with fittings complete, 14 ft. by 3 ft.
STATION-METER, 9-in. inlet and 9-in. outlet.
Tenders will be received for the whole or any portion of the above up to the 31st of January, 1870, addressed to JOHN SUMMERS, Secretary, Gas Company, DURHAM.

THE Newton-in-Mackerfield Improvement Commissioners invite TENDERS for the erection of a GASHOLDER, 60 ft. diameter and 18 ft. deep, and also for the formation and construction of a BRICK TANK for same, at their Gas-Works, Newton-le-Willows, according to drawings and specifications which may be seen at my Office, Town-Hall, to whom tenders are to be endorsed and forwarded not later than the 8th day of January, 1870.
The lowest or any tender not necessarily accepted.
R. BRIERLY, Engineer and Surveyor.
Newton-le-Willows, Lancashire, Dec. 18, 1869.

GASHOLDERS.

THE Directors of the Rochester, Chatham, and Strood Gaslight Company will be glad to receive OFFERS for the two undermentioned GASHOLDERS—the First, 42 ft. 6 in. by 13 ft., in annular cast-iron tank, with six columns, chains, and counterpoise weights, as now standing, in complete working order, at their Chatham Station; the Second, 35 ft. by 16 ft., with cast-iron plates to form tank, 35 ft. 6 in. by 15 ft., sheets, framing, six columns, guide-rollers, &c., as recently taken down, and now lying at their Gillingham Station.
Terms may be known and the Gasholders viewed by application to WILLIAM SYMS, Secretary, 56, High Street, ROCHESTER.

BRIDLINGTON GAS-WORKS.

TO CONTRACTORS & OTHERS.

THE Bridlington Gaslight and Coke Company, Limited, are prepared to receive TENDERS for the following works:—
Contract No. 1.—For the construction of a BRICK TANK, 76 ft. diameter by 20 ft. deep, for new gasholder.
Contract No. 2.—For the ironwork of a new GASHOLDER to contain 80,000 cubic ft., including erection.
Plans and specifications may be seen and further particulars obtained at the Office of the Secretary, Bridlington Quay, Yorkshire; or of Messrs. Meek and Nesbit, Civil Engineers, Sunderland.
Sealed tenders, endorsed outside, to be delivered to the Secretary on or before the 13th of January, 1870.
The directors do not bind themselves to accept the lowest or any tender. By order,
T. ESCRITT, Secretary.
Bridlington Quay, Dec. 7, 1869.

THOMAS PROUD,
GAS ENGINEER, CONTRACTOR, & FITTER,
WOLVERHAMPTON.

SOLE AGENT TO
GEORGE SKEY AND COMPANY,
LIMITED,
WILNECOTE WORKS,
Near TAMWORTH,
FOR
FIRE-CLAY GAS-RETORTS,
and all kinds of
Fire Goods required by Gas Companies.

NORTH BRITISH ASSOCIATION OF GAS MANAGERS.

The Committee of this Association have much pleasure in intimating that, through the liberality of several gentlemen connected with Gas Engineering, they are enabled to offer

PRIZES FOR ESSAYS

on the subjects after-mentioned, and for which they earnestly invite competition.
The Awards to be made at the Annual General Meeting in July next.
The subjects are:—
1. "On the best mode of carbonizing coal, taking into account condition of coal, size of retort, weight of charge per retort, duration of charge, and whether the mixture of coals in retorts is recommended or not."

1st Prize	£10 10 0
2nd do.	5 5 0
3rd do.	2 2 0

2. "On the best method of constructing and setting a bench of fire-clay retorts, having special reference to the size, shape, and thickness of retorts."

1st Prize	£6 0 0
2nd do.	4 0 0

Competition open only to Managers of Gas-Works in Scotland, in receipt of salaries of £200 (and under) per annum.
Essays, and any accompanying drawings, to be lodged with the Secretary not later than the 15th of May, 1870.
WM. MACKENZIE, Hon. Sec.
Gas-Works, Dunfermline, Dec. 30, 1869.

THE Directors of the Mansfield Gaslight and Coke Company desire to receive separate TENDERS for the construction of a TANK, and for a Telescope GASHOLDER, with all necessary fittings, &c., at their works in Mansfield.
The plans and specifications may now be inspected, and bills of quantities for the Tank examined, or obtained on payment of 10s., at their Office.
Tenders to be delivered at the Office of the Company on or before Wednesday, the 26th day of January, 1870.
Dec. 27, 1869.

ALLIANCE & DUBLIN CONSUMERS GAS COMPANY.

THE Directors of the above Company will receive TENDERS up to Twelve noon, upon Tuesday, the 11th day of January, 1870, from persons willing to contract for a term of years for the purchase and removal of all the GAS TAR produced at their Gas-Works, situated in the city of Dublin and in the town of Kingstown respectively: The quantity would be about 800,000 gallons per annum.
Tenders to state the price per gallon delivered upon the works, and to be forwarded directed to the Secretary.
By order,
JOHN STEVENSON, Secretary.
Board-Room, 114, Grafton Street, Dublin.

WALLASEY GAS-WORKS.

TO IRONFOUNDERS AND ENGINEERS.

THE Wallasey Local Board are prepared to receive TENDERS for the supply of about 200 Tons of Cast-Iron PIPES for their Gas-Works.
Specification and schedule of quantities may be had, together with all further information, on application to E. H. Harris, Esq., the Engineer, at his Office, at the Works, Great Float, near Birkenhead.
The Contractor will be required to enter into a bond, with approved security, for the due performance of the contract, which contract and bond will be prepared at the expense of the Contractor.
Sealed tenders, addressed to the "Chairman of the Gas and Water Committee," and endorsed "Tender for Pipes," to be left at my Office, 1, Church Street, Egremont, near Birkenhead, before Three o'clock in the afternoon of Wednesday, the 5th day of January next.
The Board do not bind themselves to accept the lowest or any tender.—By order,
T. SOMERVILLE JONES, Clerk to the said Board.
Public Offices, Egremont, Dec. 20, 1869.

THOMAS BEAR,
MICA, TALC, AND ASBESTOS MERCHANT,
233, HIGH STREET, BOROUGH, LONDON.

PRICES FOR MICA GAS COVERS.

7-inch Mica Gas Covers . . .		84s. per gross.
6½ " " . . .		72s. "
6 " " . . .		60s. "
5½ " " . . .		50s. "
5 " " . . .		42s. "
4½ " " . . .		36s. "
Argand for Gas Covers . . .		30s. "
Do. Paraffin Lamp . . .		30s. "

Carriage paid to any part of England, Ireland, and Scotland.
A remittance must accompany all orders, net cash.
P.S.—Not less than one gross assorted forwarded.

DRY GAS-METERS IN CAST-IRON CASES,
MANUFACTURED BY
WILLIAM AND BENJAMIN COWAN,
(ESTABLISHED 1827,)
BUCCLEUCH STREET WORKS, EDINBURGH,

Possess a simplicity of construction and facility for repair greater than any yet produced, while the excellence of the material and workmanship, and accuracy of registration, cannot be surpassed. The superiority of their Dry Meters in Tin Cases is also well known.

SOLE MANUFACTURERS OF
ESSON'S PATENT COMPENSATING GAS-METERS.
COWAN'S PATENT SIDE-VALVE GAS-METERS.

JOHN WRIGHT & CO.,

GAS STOVE AND BURNER MANUFACTURERS,

30, BROAD STREET, ISLINGTON, BIRMINGHAM.

No. 408.
Complete, as drawn, with 7-in. Opal Shade, 17s. 6d.

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Complete, as drawn, with 8½-in. Opal Shade, 20s.
Lamp only, 9s. 6d.

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Complete, as drawn, with 8½-in. Opal Shade, 21s.
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Complete, as drawn, with 7-in. Opal Shade, 14s. 6d.
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IMPROVED OPAL REFLECTOR.

7	in. White Opal	6s 6d.
8½	in. „ „	8 6
10	in. „ „	15 0
7	in. Green Opal	8 0
8½	in. „ „	10 6
10½	in. „ „	18 0

Shadowless Argand Burner for ditto, 2s. each.

IMPROVED SMOKE CONSUMER,

BRONZED AND LACQUERED.

3⅜ inch	1s. 4d. each.
4⅛ inch	1 6 „
4⅞ inch	1 9 „

If with Enamelled Top, White or Florentine, 6d. each extra.

INDIA-RUBBER TUBE.

Good quality INDIA-RUBBER TUBE, covered with Worsted, in Colours, ¼-in. external diameter, 8d. per foot.
Superior GLAZED TUBE, ⅜-in. external diameter, 5d.; 7/16-in., 7d.; ½-in., 8d.; and ⅝-in., 9d. per foot.
Also, a Tube of PURE INDIA-RUBBER, specially for Lamps, made only in 6-ft. or 12-ft. lengths, without wire, and emitting no smell, 10d. per foot.

Trade Discount 32½ per cent.

WRIGHT and CO.'S PATENT PHOTO-TELESTIKON,

Or GASLIGHT PERFECTER.

A B

All who have investigated the subject know that a large proportion of the gas is usually unconsumed, causing a feeling of closeness and oppression, as well as an unpleasant smell. If a piece of thin steel, such as a knife, be held across an ordinary gas-burner, so as to divide the flame, the whole of the gas is consumed, and the increase of light is at once apparent. Careful experiments show that 63 per cent. more light is thus obtained from the same quantity of gas.

This result is permanently effected at a cost of 3d. by the Patent Photo-Telestikon Burner, and A SAVING OF OVER SIX POUNDS OUT OF EVERY TEN POUNDS for gas ensues.

Besides the saving in cost, health and comfort are promoted.

Each of the Burners is made in six sizes—Nos. 1, 2, 3, 4, 5, 6.

Burner A.—Price, with Steel Bar, 3d. each; with Platinum Bar, 1s. each.
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Trade Discount 50 per cent.

Drawings and Price Lists of all John Wright and Co.'s Manufactures free on application.

JOHN WRIGHT & CO.,

GAS STOVE AND BURNER MANUFACTURERS,

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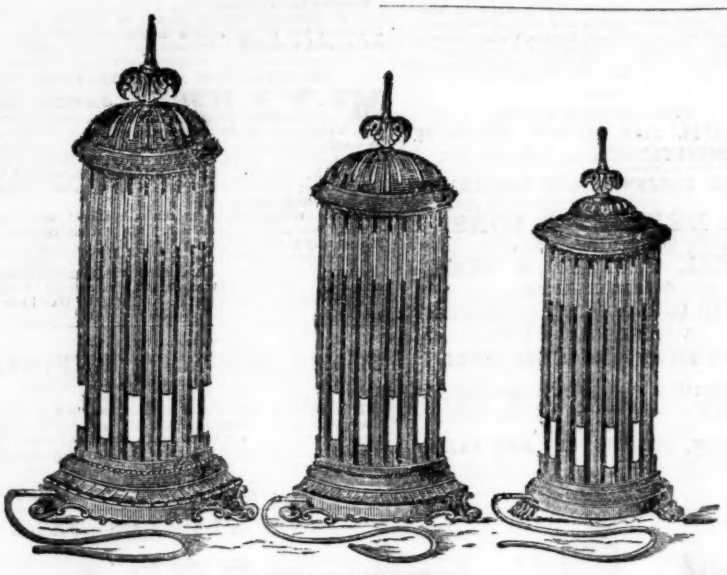


THIS REGISTERED

RADIATING GAS-STOVE

Is constructed on scientific principles, and gives out great heat by the perfect combustion of a small quantity of gas, avoiding both smell and smoke.

It can be fixed in any room by drawing the flexible Tube over the gas-nipple of an ordinary burner, which supplies sufficient gas for the smaller size.

The following are distinguishing advantages of this Stove:—

It is portable—it is ornamental and effective—it is cheap, both in first cost and in daily use—it requires scarcely any fixing—and there is POSITIVELY NO SMELL.

PRICES.

	s.	d.		s.	d.
No. 210 Stove, 21 in. high	12	6	No. 216 Stove, 40 in. high	42	0
,, 212 ,, 26 in. ,, ...	17	6	,, 218 ,, 48 in. ,, ...	63	0
,, 214 ,, 32 in. ,, ...	25	0	12 ft. of Prepared Tube for ditto.	6	0
12 ft. of Prepared Tube for ditto.	4	0	Cock and Nozzle for ditto	2	6
Cock and Nozzle for ditto	1	6			

UNSOLICITED TESTIMONIAL.

To Messrs. John Wright and Co. *Melrose Lodge, Silverhill, Hastings, July* 30, 1869.

Dear Sirs,—Owing to the coldness and dampness of this house, I was induced to become the purchaser from Messrs. Alderton and Shrewsbury of two of your Improved Radiating Gas-Stoves, one for the house and the other for my stable.

I want to ask if a smaller burner could not be put to the No. 216 Stove, as the house soon becomes so extraordinarily hot that I am obliged to reduce the gas. If a smaller burner can be introduced I will get one through Messrs. Alderton and Shrewsbury.—I remain, dear sirs, yours respectfully,

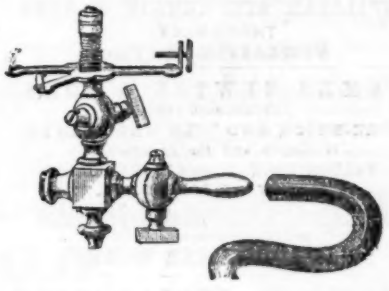
WILLIAM SHUTTLEWORTH.

P.S.—I think it right to say that our servants are much pleased with the Stove in the hall, from the fact that there is no trace of smell or smoke.

Five or more Stoves delivered free. Trade Discount 32½ per cent.

WRIGHT & CO.'S

INDIA-RUBBER TUBE CONNECTOR.



By removing the ordinary elbow from the end of a Bracket or Pendant, and substituting the above, a Stove or Reading Lamp can be supplied with gas, without trouble, and at a very trifling cost.

Price—⅜ inch, 3s. each.

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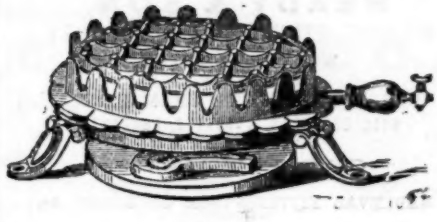
Trade Discount 32½ per cent.

WRIGHT & CO.'S

IMPROVED

BOILING & BROILING STOVE.



No. 52.

This is a very powerful Stove, with Atmospheric Burner. Will broil under and boil above at the same time.

Price 15s. each.

WRIGHT & CO.'S

IMPROVED TERRA COTTA STOVES.

No. 83.

No. 83.—Price 25s. each.

,, 85. ,, 35s. ,,

,, 87. ,, 45s. ,,

Cock and Nozzle for do. .. .. 1s. 6d.

12 ft. Prepared Tube for do. .. 4 0

No. 96.—Price 45s. each.

Cock and Nozzle for do. .. .. 1s. 6d.

12 ft. Prepared Tube for do. .. 4 0

Trade Discount 32½ per cent.

These Stoves are fitted with Bunsen's Burner. They throw out more heat than any other Terra Cotta Stove that has yet been introduced.

No. 96.

Drawings and Price Lists of all John Wright and Co.'s Manufactures free on application.

Trade Mark. THE MEDAL FOR 1862.

THE ONLY PRIZE MEDAL AWARDED FOR TUBES AND FITTINGS.

CROWN TUBE-WORKS,
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JAMES RUSSELL & SONS,
Patentees and First Makers of Wrought-Iron Tubes.

INTERNATIONAL EXHIBITION, 1862.
CLASS X.
PRIZE MEDAL
For excellence of Fire-Clay Gas Retorts, and "HONOURABLE MENTION" for good quality of Fire-Bricks.
WILLIAM STEPHENSON & SONS,
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JAMES NEWTON & SONS,
(Established 1820,)
FIRE-BRICK AND TILE MERCHANTS,
Wholesale and for Exportation,
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HANCOCK'S INDIA-RUBBER GAS-TUBING.
All sizes, from ⅛ in. to 4 in. diameter and upwards.
Also,
HORSE SINGEING APPARATUS, best make, with GAS-BURNERS, COMBS, and INDIA-RUBBER TUBING, all complete.
INDIA-RUBBER BAGS for GAS-MAINS.
WASHERS for GAS and STEAM JOINTS.
VALVES (pure solid Rubber) for STEAM-ENGINES.
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FLANGE TUBING, for excluding Draughts and Dust through WINDOWS, DOORS, and GLASS CASES.

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Established 1811.
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BILSTON STREET BRASS FOUNDRY,
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MANUFACTURERS OF
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And every Description of
GAS-FITTINGS,
Including
MEDIÆVAL FITTINGS FOR CHURCHES, &c.
Large Pattern-Books complete, with Book of Prices, 7s. 6d.

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CANNEL COAL MERCHANT,
HAYMARKET,
EDINBURGH.
Established 1840.

HOPKINS, GILKES, & CO.,
LIMITED,
MIDDLESBOROUGH,
SUPPLY GAS & WATER PIPES of EVERY SIZE.
Plain, Turned and Bored, and Coated.
CAST-IRON RETORTS.
Castings for Gas-Works of every description.
EXHAUSTERS.
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Every Description of
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Established 1820.

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EGLINTON FOUNDRY, GLASGOW,
Manufacturers of all sizes of Cast-Iron Main-Pipes by an improved Patent, General Ironfounders, Gas Engineers, and Wrought-Iron Tube Makers.

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WOOD SIEVES FOR PURIFIERS.
These justly celebrated Sieves, with bevel bars and hard-wood side frames, have been extensively made by Messrs. Walker for over seven years, and their advantages and durability are fully established. Messrs. Walker make them in very large quantities, having mills and machinery specially laid out for them, producing them at the most moderate cost.
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TO GAS COMPANIES AND THE TRADE.
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CRYSTAL, BRONZED, & ORMOLU CHANDELIERS;
IMPROVED CRYSTAL STAR & SUN LIGHTS;
VESTIBULES,
IRON BARREL, COMPOSITION TUBING,
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GAS-FITTINGS OF EVERY DESCRIPTION.
WORKS:
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REGISTERED CRYSTAL CHANDELIER.
Special Designs prepared in perfect accordance with architectural arrangements. Estimates furnished for the Lighting and Fitting up of Theatres, Music-Halls, and Public or Private Buildings with Gas.
GAS MOONS OF THE NEWEST DESIGNS.
The Patent Gas-Regulator and Purifier reduced to 6s. 6d. per Dozen.
Pattern-Books of Gas-Fittings, Crystal and Ormolu Chandeliers for 1869, are now complete.
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NEAR NEWCASTLE-UPON-TYNE,
Manufacturer of Clay Retorts, Fire-Bricks, and every description of Fire-Clay Goods.

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THE PATENT ANTI-GALVANIC PAINT
Is guaranteed to prevent and arrest rust on all ironwork, and is specially recommended as the only Paint to effectually preserve Gasholders and Purifiers, being a perfect repellent to the gaseous exhalations, &c., arising therefrom. Sample cans sent free of charge.
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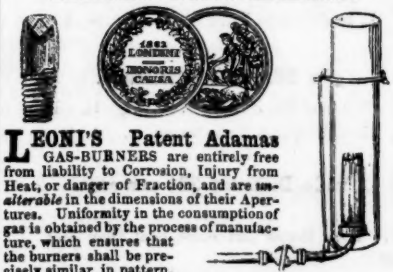
UNIVERSAL PARIS EXHIBITION, 1867.
PRIZE MEDAL in Class 24—Heating and Lighting—for Leoni's Patent Gas-Burners and Gas-Stoves.


LEONI'S Patent Adamas GAS-BURNERS are entirely free from liability to Corrosion, Injury from Heat, or danger of Fraction, and are *unalterable* in the dimensions of their Apertures. Uniformity in the consumption of gas is obtained by the process of manufacture, which ensures that the burners shall be precisely similar in pattern.
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In Districts contiguous to the Advertiser's Works.
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TAR DISTILLER AND MANUFACTURING CHEMIST,
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BRANCH WORKS AT
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Superior Quick-Drying Black Varnish for every description of Ironwork. Sold in barrels of about 36 gallons. Delivered free to any station in England at 1s. 2d. per gallon, cask included.

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MR. W. H. BENNETT, having had considerable experience in matters connected with Gas, Water, and Sanitary Improvement, begs to say that he continues to assist Inventors in the perfection of their designs, and to obtain for them PROVISIONAL PROTECTION, whereby their invention may be secured for Six Months; or LETTERS PATENT, which are granted for Fourteen Years.
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This book is replete with information, and prices of many well-known as well as perfectly new inventions, interesting to all in the mechanical trades, as well as corporations, governments, gas managers, private gentlemen, and shopkeepers.
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"FIVE MINUTES' TALK ABOUT GAS"
Is intended to be given by Gas Companies to their Customers. It is hoped the advice it contains may be the means of correcting mistakes and preventing accidents; and also of assisting the Officers in some of the most difficult of their duties.
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"Every householder should read it."—*Courant.*
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HUCKNALL COLLIERY COMPANY
Can offer a CANNEL COAL yielding a large quantity of Gas of superior quality.
Prices and information on application to the HUCKNALL COLLIERY COMPANY, Hucknall Torkard Collieries, near NOTTINGHAM.

CLIMPY CANNEL COAL.—Gas per ton, 12,488 cubic feet; illuminating power, 32·59 candles. Coke excellent.
WILSONTOWN CANNEL COAL.
Gas per ton, 10,810 cubic feet; illuminating power, 28·41 candles. Coke very good.
Shipping port, Granton, Firth of Forth.
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Upwards of 16 years Retort Setter to the Chartered Gas Company, Brick Lane and Curtain Road Stations.
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Where he manufactures both WET and DRY METERS, several hundreds of which are in use in many Gas-Works in England, Ireland, and Wales.

These Meters have received the highest praise from many eminent Gas Engineers, for their excellence of manufacture, superiority of workmanship, and accuracy of register. They are warranted to measure correctly and not to vary. Every Meter manufactured by him maintained in perfect repair for a period of *five years*. All bear the Government stamp.

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CATHELS'S Patent District Dry Gas-GOVERNOR is the only perfect self-acting contrivance for Regulating the Pressures in the higher levels of a district.

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Beg to inform Gas and Water Companies and the public, that they keep in stock in London all the CASTINGS in general use in Gas and Water Works, including Iron Retorts, Socket and Flange Pipes, Bends, Branches, and Syphons of all sizes, Lamp Columns, &c., &c.

N.B.—Orders for Cast-Iron Tanks, Girders, Columns, Cylinders, and all irregular castings, will have immediate attention.

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PARIS, 1867.

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GAS ENGINEER.

LONDON, 1862.

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LAMP METERS AND BOXES.

LOWE'S JET PHOTOMETERS CAN NOW BE RATED TO 14 CANDLES.

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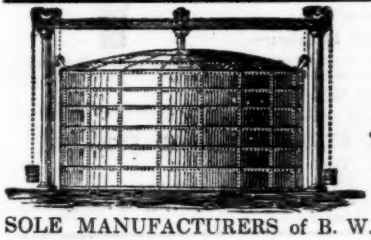

IMPROVED GAS APPARATUS,

FOR CITIES, TOWNS, VILLAGES, &c.,

INVENTED AND MANUFACTURED BY

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SOLE MANUFACTURERS of B. W. THURSTON'S IMPROVED SCRUBBER, CONDENSER, and WASHER, in use in many of the principal Gas-Works on the Continent.

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Prices, according to size, can be obtained upon application to

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TO CORPORATIONS, GAS ENGINEERS, AND OTHERS.

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GRANGE METER-WORKS, EDINBURGH,

Begs to intimate that he is the ORIGINAL MANUFACTURER of

DRY GAS-METERS IN CAST-IRON CASES.

The Meters are protected by Registration on the 17th of December, 1864, under the "Copyright of Designs Act."

They are much more durable, and at the same time more easily repaired than those in Tin Cases.

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CANNEL COAL.—The West Yorkshire Iron and Coal Company, Limited, beg to draw the attention of Gas Companies to their Cannel, of which the following is the analysis made by W. Huggon, Esq., F.C.S.:

Yield of gas per ton	10,296 cubic feet.
Illuminating power rather over	21 sperm candles.
Yield of coke per ton . . .	12 cwt.

The actual working, as reported by one of the largest gas companies in Yorkshire, gives results still more favourable, viz.—

Yield of gas	10,416 cubic feet.
Illuminating power	21·89 sperm candles.
Coke	The same.

We add from the same source the capabilities of the common gas coal—

Yield of gas	10,080 cubic feet.
Illuminating power	14·41 sperm candles.
Yield of coke	13 cwt.

COLLIERIES—WEST ARDSLEY, near LEEDS.

For further particulars, address to the Office of the Company, 15, York Place, LEEDS.

POPE & PEARSON'S GAS COAL.—We have now the authority of several of the most eminent Gas Engineers of London in stating that our Coal yields *in practical working over* 10,000 *cubic feet of gas, with an illuminating power of* 16 *candles.*

One ton yields 12¼ cwt. of good coke. This Coal can be shipped from Hull, Goole, Liverpool, Morecambe, and Barrow.

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OLD WEMYSS CANNEL COAL.—Yield of gas per ton, 12,896 cubic feet; illuminating power, 31·75 standard candles. Port of shipment, Wemyss.

Analysis and price on application to Mr. WM. CAREY, Manager, Wemyss Colliery, Kirkcaldy, FIFE.

CANNEL COAL.

MESSRS. GRIFFITHS BROTHERS,
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Beg leave to call the attention of Gas Companies to the superior quality of their Cannel for gas-making purposes.

This Cannel produces in actual working, in iron retorts, 9200 cubic feet of 32-candle gas, and upwards of 11 cwt. of coke, and in clay retorts will produce 11,500 cubic feet of 25·9-candle gas.

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&c., &c.,
SCOTSWOOD FIRE-BRICK WORKS,
NEAR
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Manufacturers of all kinds of
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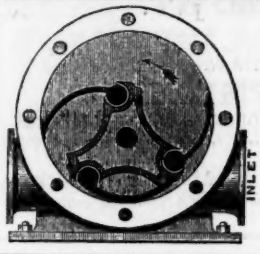

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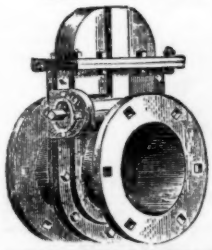

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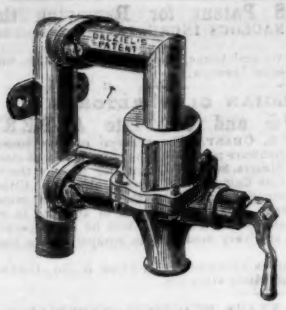

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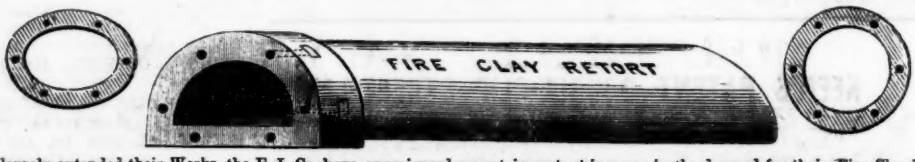

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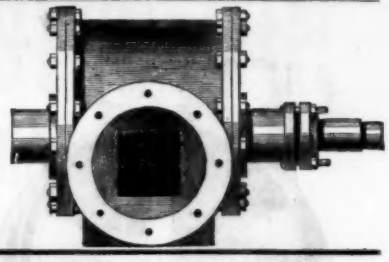

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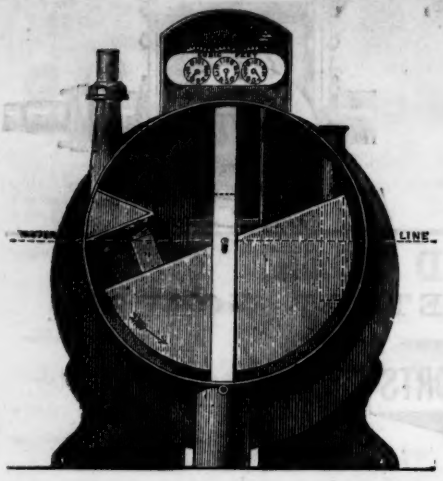

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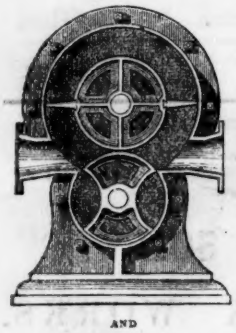

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